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The Legislative Reference Bureau, at the request of the Hawaii House of Representatives, conducted a study of vocational and technical education in the State including a description of the present objectives and programs, an evaluation of the programs in view of objectives, and the development of potential goals and ways of achieving such goals in providing vocational and technical education in the future. The methodology of the study included empirical observation, interviews, questionnaires, and review of relevant literature. The renewed focus on vocational education at the State and national levels is in response fo socioeconomic problems which have given vocational education a new relevance as a means of reinstating the sense of meaning and purpose to the work life. Vocational courses in the secondary schools generally lack clarity in objectives and are viewed by key personnel as programs for non-college bound students. The secondary programs are not preparing students for post-secondary programs and the definite lack of articulation and relation makes it necessary for the post-secondary programs to offer remedial work while trying to carry out occupational preparation. Some of the alternatives which offer challenges for curriculum change, including maintenance transformation of vocational education into curriculum aimed at intellectual development, are included. (HC)

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EDUCATION in a CHANGING WORLD of WORK in a DEMOCRATIC SOCIETY

EDUCATION
in a
CHANGING WORLD
# of WORK
in a
DEMOCRATIC SOCIETY

LEGISLATIVE REFERENCE BUREAU

Report No. 3, 1966

STATE OF HAWAII

VT005608

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STATE OF HAWAII

H.R. NO. 46
H.D. 1

COPY

HOUSE RESOLUTION

REGARDING A STUDY OF VOCATIONAL AND TECHNICAL EDUCATION.

WHEREAS, failure thus far to deal adequately with the growing numbers of technologically displaced and unemployable persons constitutes a serious danger to the well-being of American society; and

WHEREAS, the educational system bears much of the responsibility for ensuring that young people enter society prepared to perform jobs and functions required by a technologically advanced society; and

WHEREAS, the post-high school technical education programs and the high school vocational education programs administered by the Department of Education of the State of Hawaii should prepare young people in Hawaii to find and perform the kinds of jobs that are or will be available, and to familiarize such youth with the kinds of skills demanded by modern industrial society; and

WHEREAS, lack of information makes it extremely difficult to determine the success of the Department of Education's programs for vocational and technical education; now, therefore,

BE IT RESOLVED by the House of Representatives of the Second Legislature of the State of Hawaii, Budget Session of 1964, that the Legislative Reference Bureau be, and hereby is, requested to undertake a study of vocational and technical education in Hawaii including: (1) a description of the present objectives and programs of vocational and technical education; (2) an evaluation of the present programs in view of the objectives of such education; and (3) the development of potential goals and ways of achieving such goals in providing vocational and technical education in the future; and

BE IT FURTHER RESOLVED that the Department of Education, the Department of Labor and Industrial Relations, and the University of Hawaii work with the Legislative Reference Bureau in the conduct of this study, and provide data for the study as requested by the Legislative Reference Bureau; and

BE IT FURTHER RESOLVED that certified copies of this Resolution be forwarded to the Director of the Legislative Reference Bureau, the Superintendent of Public Instruction, the Director of Labor and Industrial Relations, and the President of the University of Hawaii.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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EDUCATION
in a
CHANGING WORLD
# of WORK
in a
DEMOCRATIC SOCIETY

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Research Assistant

Report No. 3, 1966

LEGISLATIVE REFERENCE BUREAU

UNIVERSITY OF HAWAII
Honolulu, Hawaii 96822

Price $2.00

FOREWORD

This study of vocational and technical education in Hawaii's public secondary and technical schools has been prepared in response to House Resolution No. 46 adopted during the 1964 Regular Session of the Hawaii State Legislature. The resolution requested the Legislative Reference Bureau to "undertake a study of vocational and technical education in Hawaii including: (1) a description of the present objectives and programs of vocational amd technical education; (2) an evaluation of the present programs in view of objectives of such education; and (3) the development of potential goals and ways of achieving such goals in providing vocational and technical education in the future."

Vocational and technical education exists within the larger context of general public education in a democratic society. In the course of the study, it has been necessary to evaluate vocational and technical education in terms of the contribution it makes to the attainment of broad societal goals and democratic ideals. The examination of vocational and technical education in that context raises questions about the need to: (1) establish definitive and specific goals for public education which are consistent with democratic ideals; (2) critically and intensively re-examine our present system of public education and the contributions it makes to achieve those democratic ideals; and (3) increase scientific research and experimentation in reshaping or revising the curriculum in the public schools in order to insure that new curriculum developments do in fact directly contribute to the attainment of the specific democratic goals. Any such contemplated re-examination or revision in the content of the curriculum must necessarily include as a part thereof, a re-examination and revision of vocational and technical education.

The Bureau released a complete preliminary draft of the report in 1965 for the purpose of encouraging discussion and constructive criticism. Many helpful suggestions were made for the improvement of the draft. Among those who reviewed the draft were professors of the University of Hawaii in the fields of education, political science, American studies, agriculture, and home economics; educators at different levels within the Department of Education; members of the board of education, selected federal administrators, professors of other universities; and members of the public interested in public education. It is our hope that this study will open up new areas for thought, consideration, discussion, agreement, planning, and implementation.

The Legislative Reference Bureau was indeed fortunate in having the final report completed by Mrs. Dorothy Moore Edlin who is presently residing in California. Various other members and former members of the bureau have worked on this report. Special mention should be made of the advice and assistance of Mr. Michael Meriwether, a former staff member, and the former director, Mr. Tom Dinell.

The execution of this final report would not have been possible without the assistance of many individuals and agencies who have taken their time in thoughtfully and critically reviewing the report. To these many individuals and agencies, we express our sincere appreciation.

Herman S. Doi
Director

December 1966

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Chapter I

INTRODUCTION

The Hawaii House of Representatives during the 1964 budget session adopted H. R. 46, H. D. 1, requesting the Legislative Reference Bureau "to undertake a study of vocational and technical education in Hawaii including: (1) a description of the present objectives and programs of vocational and technical education; (2) an evaluation of the present programs in view of the objectives of such education; and (3) the development of potential goals and ways of achieving such goals in providing vocational and technical education in the future." The request heavily emphasizes the evaluation of present goals and development of new goals for this segment of the educational enterprise. It also expresses concern over the adequacy of present vocational programs in preparing youth to meet the competency requirements of a radically changing labor market.

A possible way of approaching the legislative request would have been to examine vocational and technical education as a separate part of the educational system intended to meet the special end of preparing individuals for their future work roles. Such an approach would suggest that the report take the form of determining how many individuals would be required to fill what positions in the near future. Present programs and objectives would be evaluated by attempting to determine whether or not training programs and the number of persons trained meshed with the labor market picture.

Deeper consideration of the request and of the realities both of the changing labor market and of the educational system led to the view that it might prove more fruitful to take a somewhat different approach. Empirical examination of the vocational and technical education system in Hawaii made it apparent that these programs constitute an integral part of the entire educational system. The vocational system has important effects on the quantity and quality of education a student receives. It is possible to examine the functions the vocational system performs in the larger educational system. Such an approach provides the basis for evaluating present vocational and technical education programs and objectives as they affect the general goals of public education.

When evaluating the objectives and programs of the educational system, including its vocational aspects, it is important to determine what consequences they have for the attainment of democratic ideals, because the structure, practices and objectives of education are important determinants of the extent to which we attain our democratic ideals. Since the legislative request emphasized an evaluation of the goals of vocational and technical education, and since such education is an important part of the total educational enterprise, this report attempts to emphasize the consequence for the attainment of democratic ideals of the present organization of vocational education as it works in conjunction with the entire educational system.

The Approach of this Study

Chapter I sets forth some of the democratic ideals against which the consequences of present educational practices, programs and objectives can be examined. This chapter also explains some of the sociological or psychological concepts and research findings which are relevant to a consideration of the consequences for democracy of the present organization of the vocational system working in conjunction with the entire public educational system. This is intended to provide the reader with an understanding of the perspective from which the vocational system was viewed in the course of the study.

Chapter II contains an examination of: (1) the historical function of vocational education; (2) the assumptions on which vocational education has been based; (3) the larger social and economic causes and consequences of secondary level vocational education; and (4) the interests which are served and the interests which are depressed by the present system of vocational education.

Chapter III of the study focuses upon the Hawaii secondary schools. Attention is given in this chapter to the amount of resources devoted to vocational education; the formal and the informal purposes which vocational education is thought to serve by Hawaii educators; and the manner in which the organizational structure of the school assigns children to courses, including the bases on which such assignments are made.

Chapter IV is concerned with the technical schools and the apprenticeship program.

Chapter V attempts to bring together the earlier chapters in a discussion of the benefits and deficits of the existing system as weighed against democratic ideals and against the work-preparation requirements of the changing industrial system. Alternative methods of organizing the school system are discussed in terms of the consequences of such organizations for democratic ideals and industrial requirements.

Chapter VI briefly discusses the curriculum reform movement, the recent actions of the board of education affecting curriculum, and some of the major curriculum challenges facing public education in Hawaii.

The methodology of the study has been: (1) empirical observation of the Hawaii public secondary and technical schools; (2) extensive interviewing of school personnel; (3) analysis and interpretation of questionnaires; and (4) consultation of as wide a range as feasible of relevant literature in the fields of sociology, psychology, education, economics and political science. Limiting the study to the vocational literature does not provide an adequate basis for taking a critical look at how the educational system operates, nor a basis for evaluating present programs and objectives in the light of democratic ideals. The report combines theoretical reasoning with empirical examination of the Hawaii secondary system. Discussions of the goals of education in a democratic society must necessarily be theoretic and deductive while at the same time taking account of the available empirical evidence. This report attempts to pose questions, many of which have been too long ignored, in the hope that interested citizens and officials will be encouraged to explore basic problems involved in improving the contribution of the educational system to the quality of life in a democracy.

Relevant Democratic Ideals

Nature of Man

What are some of the democratic concepts that provide the background for a consideration of how the vocational system in conjunction with the total educational system functions? One of these concepts has certainly to do with the nature of man, for the claim to superiority of the democratic form of government over more hierarchical forms is based in part upon the idea that nearly all men possess sufficient intellectual potential to actively and intelligently participate in the political life of the state. The public supports an educational system open to all, partly to ensure that intellectual potential is developed so that man, as citizen, can perform adequately. A democratic form of government is also defended on the grounds that it provides the optimum chance for individuals to be self-determining, to serve their own ends, rather than having the ends which they serve imposed on them by others. This argument in favor of democracy presupposes that man has a nature which most nearly achieves its potentialities when its capacities for self-determination and self-fulfillment are nurtured, an outcome which requires stimulation and development of man's intellect and reason. In the words of Arthur Bestor, a strong advocate of intellectual development as the proper aim of education in a democracy:

> Universal public education can be defended only on the assumption--a correct assumption, I believe--that needs which require satisfaction by intellectual means are common to all men and are so important that society ought to provide the amplest possible training in the intellectual processes involved.[1]

The development of the intellectual powers is integrally related to participation in the cultural and political life of the community. Thus, aristocracy preserved to the few the education necessary to full participation in cultural and political life. Democracy promised to extend to all the goods of life formerly reserved to an elite; foremost amongst those goods was the cultivation of mind and spirit through liberal education. The relations between power and privilege and liberal education were well appreciated by the founders of the American public school system as the following words of the prominent Unitarian minister and educational leader William Ellery Channing indicate:

> We are told that this or that man should have an extensive education; but that another, who occupies a lower place in society, needs only a narrow one; the humble mechanic has need only to study his last and his leather. But why should not the latter, though pursuing an humble occupation be permitted to open his eyes on the lights of knowledge? Has he not a soul of as great capacity as the former? Is he not sustaining the same relations as a parent, a citizen, a neighbor, and as a subject of God's moral government?[2]

Acceptance of the democratic view of man's nature as requiring intellectual fulfillment precludes acquiescence to a dualistic educational system which is satisfied with providing most individuals with only that level of general education needed for their work lives, while providing only an elite with the intellectual power to grapple with central problems and ideas and to appreciate and contribute to mankind's highest cultural achievements.

It cannot be empirically demonstrated that almost all humans possess the potential for the kind of intellectual development which results in knowledge and culture and love of learning. Nor can it be demonstrated conclusively that the development of individual autonomy is dependent upon intellectual capacity and knowledge and culture. But these are assumptions upon which the democratic faith has long rested and which have long provided the justification for public support of universal education.

When vocational education is viewed with the ideal of universal enlightenment or the fulfillment of the peculiarly intellectual needs of man in mind, different kinds of questions emerge than would occur to us if we were simply asking whether or not vocational courses prepared individuals for their work roles. For example, we might consider whether or not the impact of vocational efforts is to encourage an instrumental view of all education. In the instrumentalist view of education, the major criterion for the success of an educational system is whether or not it efficiently allocates individuals to occupational categories which are thought to correspond with individuals' abilities.

The second major instrumentalist objective for education is to make all persons law-abiding citizens. This view of educational objectives emphasizes developing only those abilities which are thought to be needed for effective functioning of the productive system or for continued functioning of the state. Those who favor an instrumentalist view, for example, seem chiefly concerned that all individuals who display the ability on tests to master a profession are directed towards this end so that the state does not suffer from loss of their talents.[3] For those who are less gifted, it is sufficient to teach them respect for education and for the law, along with useful skills. The human ends of man tend to be neglected when he is considered chiefly as a means to smooth functioning of the productive and political system and "educated" accordingly.

In contrast, a non-instrumentally minded educational system would be less concerned with the efficient allocation of students according to their apparent capacities and more concerned with maximum growth of all students. Such education is intended to serve the ends of individuals rather than ensuring that individuals will be formed to serve the ends of the state.

Again, if we view vocational education in the light of the democratic ideal of maximum development of the intellectual capacities of all, we might ask whether the amount of resources allocated to vocational subjects constitutes an optimum allocation of resources within education. The enormous material wealth provided by a sophisticated technology frees the resource of the time of youth from the demand for early contributions to the productive system. Thus it is possible for youth to prolong their years in school. How much of this extended time available need be devoted to preparation for a work role? A rational system dedicated to the democratic view of man's nature would presumably devote as little time as necessary to preparation for specific work functions and as much time as feasible to enrichment of human consciousness.

Equality of Opportunity

Any statement of democratic ideals would certainly include the concept of equal opportunity. Analyses of the equality of opportunity actually provided by American society tend to focus more and more on the educational system. One reason for the current attention given to the problem of equality of educational opportunity is that the educational system has become increasingly responsible for allocating individuals to occupational categories. This means, in effect, that the major route to higher status and more financially rewarding occupations is through the educational system.

The importance of the educational system in allocating "life chances" amongst the individuals in society suggests the need to examine the processes used by the educational system to identify "ability" and to encourage its development. A great deal of research effort has been focused on this general area in recent years. One of the results of this effort has been a clarification of the relation between the socio-economic class origins of the child and his chance for school success. It has become increasingly patent that measures used by educational systems to determine how much "ability" a child has are more measures of socio-economic and educational deprivation than they are of innate ability. Thus, the problem emerges: If the educational system seeks out those who test well and give them an enriched educational program, is it not then simply reinforcing environmental inequalities?

The concept of compensatory education and efforts made at preschool education for the socio-economically disadvantaged are based on a recognition that the educational system must make a positive effort to overcome the deleterious effects of environment on the educability of the child if equality of opportunity is to become a reality and if the potential abilities of all our children are to be developed. Little attention, however, has thus far been directed at the consequences of the secondary curriculum for equality of opportunity. In part, this may be due to an assumption that by the time junior high school or high school age is reached it is too late to significantly alter the cognitive ability or performance level of children. In part, however, it may be due to the widespread view that vocational programs are essential to prepare the non-college bound for the next step in life. Both of these ideas need critical examination.

Additionally, a number of students of the school system have pointed out that the educational systems must bear some of the responsibility for the low level of academic performance typical of lower class children. One of the crucial ideas here is that many middle class teachers typically have low expectations of lower class students which seems indicative of a basic lack of respect for the lower class child. This lack of respect is said to be a consequence of the combined impact of: (1) social class differences between teacher and child; (2) repeated failure and ensuing frustration on the part of both teacher and child; (3) acceptance by teacher of I.Q. test scores as proof of limited intellectual capacity of the child; and (4) racial tensions or outright prejudices. The child is said to internalize this lack of respect to the detriment of his school chances. Application of this insight to the secondary system suggests that the existing vocational system may be a built-in accommodation to the low educational expectations teachers often have for lower class children.

Closely allied to the concept that the quality of the child's school performance is deeply affected by the expectations of teachers is the concept that much greater efforts need to be made to stimulate the intellect of the culturally less advantaged child. How much effort individual teachers or the school system in general make to provide intellectual stimulation will depend in part on how optimistic or pessimistic a view is taken of the potential intellectual capacities of children. One of the disadvantages of present testing programs is the tendency on the part of some school personnel to treat test results as absolute measures of the maximum capacity of children. Since lower class children as a group have lower I.Q. scores and achievement scores than do middle and upper class children, and since school personnel often treat these scores as measures of maximum capacity, it is natural that fairly low expectations of the intellectual potential of such children are entertained. Low expectations and minimal efforts at intellectual stimulation become self-fulfilling prophecies. The process is a kind of vicious circle which contributes to locking lower class children out of the opportunities for development of their innate intellectual potential.

This is not the place to review all the research on the relation between social class status and the educability of the child or all the existing educational techniques which can be used to stimulate the intellectual development of all children. The point is that there is considerable evidence that the innate capacities of many youth, and especially those who come from low socio-economic family backgrounds, have been grossly underestimated and this evidence suggests the desirability of reconsidering the existing goals expressed in present secondary curriculum and especially those considered appropriate to non-college going youth.[4]

Open-Class Society. The extreme division of labor and specialization of function required by an advanced industrial order perhaps negates the possibility of attaining an equalitarian democracy. In our society, differential status positions are accorded different occupational categories. Sociologists have long used occupation as the major indicator of social class position. In a sense, industrial democracies have accepted the concept of maintenance of an open-class society. An open-class society means one in which the individual has a maximum opportunity to move up or down in social class position depending upon his own efforts rather than the accidents of birth. The educational system obviously plays a crucial role in determining how open the class or occupational system remains. It does this in part by decisions as to which individuals shall take secondary curriculums which maximize opportunities for mobility, and also by decisions as to how many individuals take such secondary curriculums. The existence of vocational tracks at the secondary level means that the secondary system operates as a stratification device. Given the increased resources society has to devote to education it is appropriate to inquire whether the occupational, and thus the stratification decisions could be postponed to a later age in the interest of increasing all children's opportunity for occupational mobility.

Equality. American society still embraces the hope that a more genuinely equalitarian society can be achieved, despite the existence of a class of status system which corresponds to occupations. While American society has traditionally considered all forms of labor to be honorable, it has nevertheless bestowed unequal status on different occupational categories. The inequality of prestige commanded by different occupational groups is generally attributed to such factors as the length of time and energy required to prepare for the occupation, the relative scarcity of persons qualified for the various occupational roles, the relative power over others' lives exercised by various occupations, and so forth.

Advocates of vocational education have traditionally been especially concerned with this aspect of equality. The general contention is that since society depends upon all forms of labor, society should show equal respect for all occupations, and one way to ensure such respect is to teach industrial, agricultural, commercial and homemaking skills in the schools. This contention reflects an American tendency to attempt to increase the prestige of a given occupation by developing and instituting a separate educational program, offering it as preparation for the occupation, and eventually requiring it for entrance to the occupation. The fact that long existence of vocational courses in the American high school has not solved the status problem suggests that the argument needs to be reexamined. The present practice is to introduce courses which may or may not provide occupational training, but are nevertheless oriented around occupations, and then exhort teachers and students to accord such programs equivalent respect to college preparatory programs. The alternative view of the role of the school in furthering equality is, rather than attempting to create equality through devaluing intellectual goals, to concentrate all the resources and energies of the schools on extending the benefits of intellectual power and the disciplined mind to all students. In the words of Horace Mann:

> Education, then beyond all other devices of human origin, is the great equalizer of the conditions of men--the balance-wheel of the social machinery. . . . The spread of education, by enlarging the cultivated class or caste, will open a wider area over which the social feelings will expand; and, if this education should be universal and complete, it would do more than all things else to obliterate factitious distinctions in society.[5]

Traditionally, work has constituted such a major part of human existence that human beings tend to be molded by their work roles, and thus equated with them. The identity of man with a work role may be at the root of the appeal to treat all occupations as being of equal value. As working hours shorten, as machines perform functions formerly requiring labor power and as goods become more abundant, man's opportunities for growth and development and for definition of self without regard to occupation increase. Indeed, the great promise of technology is that man will be increasingly freed from the necessity of productive labor and can increasingly become involved in the distinctly human world of knowledge, imagination, meaning and love. It may be that the only road to genuine equality is by providing all persons an equal opportunity to acquire a liberal education.

Freedom. The role of the vocational programs in the total educational enterprise should also be considered in the light of the democratic ideal of freedom. An important aspect of freedom is freedom of occupational choice. That freedom of occupational choice is an ideal very difficult of even approximate attainment should be obvious. Occupations change very rapidly. With the extreme division of labor existing in our highly industrialized society, the task of enumerating occupations and even defining categories for them is endless. Young people are generally aware of the most visible occupations, as the great popularity of the categories of air line hostess for girls and engineer for boys amongst high school seniors amply demonstrates. The occupations any given youngster may be aware of depends to a large extent upon his social class origins and the peculiar accidents of his own experiences. Furthermore, few individuals not in an occupation have much knowledge of its inner workings, or its subdivisions of labor. Even the person who enters an occupation learns only over a period of time of the different positions contained within it. Since choice requires knowledge of alternatives, any genuine exercise of occupational choice is tenuous at best.

How can society and the educational system increase the freedom of occupational choice of students? One way is to postpone the decision as long as is practicable while at the same time increasing the student's capacity to grasp and visualize the occupational world. A complementary way is to increase the emphasis on the education which provides the foundation for any specialized efforts.

Defining Terms

For purposes of this report, the term "vocational education" or "vocational training" is used to describe all programs or courses intended to introduce individuals to or train them for entry positions in an occupation or group of occupations generally classified below the technician level and not requiring a baccalaureate degree; that is, to occupations ordinarily classified as semi-skilled or skilled occupations. The term is used herein to designate such programs whether offered at the secondary or the post-high school levels, whether to children or adults. It includes both home economics courses intended to introduce or train persons in the tasks involved in homemaking and courses in the trades at the high school level which are labled industrial arts, as well as business and agriculture courses.

It should be pointed out that professional vocational educators make a formal distinction between "vocational education" and "practical arts education". Vocational education has in the past received federal support while "practical arts" education has not. The merits and educational implications of this distinction are explored in later chapters. Suffice it to say at this point that in the interests of brevity and consistency the term "vocational education" is used herein to designate all the secondary courses which are organized around occupational categories rather than academic disciplines and which are intended to introduce individuals to skills used in various occupations.

The term "technical education" or "technical training" is used to describe programs or courses intended to introduce individuals to or train them for occupations at the technician level; that is, occupations below the engineer level, which do not require a baccalaureate degree and which require the use of more cognitive skills and less manipulative skills than do occupations classified as skilled.[6]

The term "occupational training" is used to denote any programs or courses, wherever or to whomsoever offered, which are specifically intended to train persons for a particular occupation. This occupational training may be differentiated from other education which may be of immense occupational relevance (such as the ability to speak or write, for example) but which is not specific training for a particular occupation.

The term "occupational education" is used to refer to those aspects of general education which prepare persons to lead an effective work life, as distinguished from particular skills useful or necessary to a particular occupation or group of occupations. Included would be such things as: the socialization of the child which makes him receptive to accepting the responsibilities of work; social and communication (in the sense of being able to relate to others) skills of occupational significance; understanding of the occupational mobility system and the occupational and social status systems; the relationship between education and occupational opportunities; the manner in which productive work is organized at present, and historically; and an understanding of the respective roles of labor, management and government in the modern economy, and how these evolved.

"General education" in this report denotes education in what is included in the fundamental disciplines. It does not refer to courses in practical applications of knowledge, manipulative techniques, how-to-do-it courses, courses offering to aid in the solution of personal or occupational problems, courses (whether called academic or not) which consist of compilations of facts or concepts but which do not present an organized introduction to, or study of, the methods of inquiry, or modes of thought characteristic of a fundamental discipline. The fundamental disciplines at this time include the humanities (including literature, art and music, and languages), mathematics, history, and the physical and social sciences. What should or should not be included as a fundamental discipline changes over time. In the latter half of our century, knowledge of these disciplines is necessary to participation in intellectual life. Knowledge of them is prerequisite to more advanced work. And knowledge of them is required for understanding of the central issues and ideas, the institutions, practices, and even the machines of modern life.

> It is hard to see how any intelligent man, realistically examining the world in which we live, could deny the relevance of these studies to the intellectual life of every modern man. Science is clearly one of mankind's central interests today, even more than in the nineteenth century. Mathematics underlies not only science but also the increasing host of other modern activities that make use of quantitative data. History is a discipline peculiarly relevant to a changing world, for the nature of change is one of its primary concerns. Moreover, most of the world problems we have to face can be understood only in terms of their historical matrix. Command of his own language and its literature is one of the indisputable marks of the educated man. And among nations that must hang together if they are not to hang separately, knowledge of more than a single language is prerequisite to really effective citizenship.[7]

Education in the disciplines is general in that it has the generative power to organize the otherwise undifferentiated experience of mankind. Man, over the long centuries of his existence, has developed conceptual tools which enable him to organize experience, to see form and structure in it. Thus, man's experiences become meaningful to him and enables him to attain a certain degree of mastery and power over his environment. This accumulated knowledge of mankind is organized and represented in the disciplines; by systematically teaching these disciplines, mankind's accumulated intellectual experience and power can be passed on without each generation having to begin at the beginning.

The definition of general education used in this report is intended to preclude inclusion of courses carrying the labels of academic disciplines which are not genuinely liberal, for example, surveys of allegedly important historical facts and events or uninformed, opinionated discussion of current events, with no attempt to develop the student's ability to think as an historian, or to critically examine evidence and relationships. The methods that can effectively teach disciplined habits of thought, authentic knowledge, intellectual power and capacity to generalize well and use abstractions capably are by no means clear and settled. In short, much of what has popularly been referred to as general education is purposely excluded from the term as used herein.[8]

Chapter II

THE RELEVANCE OF VOCATIONAL EDUCATION

Vocational courses, initially introduced on a wide scale about a half century ago, today constitute a substantial portion of the secondary curriculum of many schools throughout the country and of most schools in Hawaii. It is important to examine this kind of educational offering not only because it makes up part of the usual secondary curriculum, but also, because in varying degrees it affects the quantity and quality of education students receive. This chapter reviews vocational education in terms of its philosophy and history in relation to past and present social and economic changes and the implications of such changes for the future. This is essential in order to determine the relevance of vocational education, past, present and future, in preparing youth to perform adequately the many roles they must fulfill in a dynamic and changing world. While vocational education must be studied historically and philosophically, it must also be viewed within the larger context of the economic system and of social and political objectives, for such education should not be an end in itself.

Current Interest and Concern

There is at present a renewed focus of interest in vocational and technical education and occupational training on the part of both national and state governments.

At the National Level

On the national level this interest was demonstrated by President Kennedy's appointment of a panel of consultants on vocational education, an advisory body whose members were drawn from education, labor, industry, agriculture, and the public, and directed to review and evaluate the then current National Vocational Education Acts,[1] and make recommendations for improving and redirecting the program.[2] The work of President Kennedy's panel of consultants led to the Vocational Education Act of 1963, just as Woodrow Wilson's 1914 Commission on National Aid to Vocational Education laid the basis for the first national vocational education legislation, the Vocational Education Act of 1917, better known as the Smith-Hughes Act. National interest in vocational training is also reflected by the enactment of the Man-Power Development and Training program, the manpower training provisions of the Area Redevelopment Act, the technical training provisions of the National Education Defense Act, and by certain provisions of the Economic Opportunity Act.[3]

This renewed interest is a response to current socio-economic problems which appear to be interrelated and which some think vocational and technical training can help solve. The problems include a high persistent level of unemployment even in periods of recovery from depression, a substantial percentage of unused national industrial plant capacity, difficulty in meeting the competition of foreign industry, pockets of poverty throughout the nation, persistently high secondary school drop-out rates, an apparent increase in juvenile criminal activity, and finally the long-term trend towards decreased job opportunities in the unskilled and semi-skilled categories.

In Hawaii

In Hawaii, concern is reflected in House Resolution 46, H. D. 1, requesting the Legislative Reference Bureau to study and report on both present and potential vocational and technical education objectives and programs. The community college movement is also a manifestation of keen interest in such education for these colleges will include vocational and technical training objectives and programs within their curriculums. The existing technical schools (except in Hawaii county) have been incorporated into these colleges, which are administered by the University of Hawaii. Interest in vocational education was also demonstrated by plans of the Department of Education for addition of new vocational programs to the high school curriculums to take advantage of federal funds made available by the Vocational Education Act of 1963.

This study arose in part out of concern that the vocational education received in Hawaii's secondary schools was not related in a realistic way to the world of work which the students taking such courses would face. It was recognized that many of these courses were concentrated in fields of declining employment opportunities, especially agriculture. Further concern was expressed regarding the implications of automation and other forms of technological sophistication on the future occupational structure in the State and the relationship of potential employment trends to the educational system.

Vocational Education and Socio-Economic Problems

The original federal vocational education legislation was considered by its advocates as a solution to all manner of social and economic problems.[4] At that time, it was claimed that vocational education would cure unemployment, that it would be a cure for American difficulty in meeting foreign competition, that it would prevent further destructive exploitation of our natural resources, that it would raise the standard of living, that it would be a cure for political radicalism and "industrial and social unrest",[5] and finally that it would be a cure for the kind of work offered the general population in a machine age--the repetitive factory work with its destructive and debilitating effects on the human spirit.[6] It would seem that vocational education at that time was being held out as an alternative to the organizing of labor.

In retrospect, it is obvious that vocational education as it operated in the American educational scheme was hardly a cure for general social and economic problems.[7] Yet today, expansion of vocational education is viewed by many as an essential contributor to solving problems of unemployment, unused industrial plant capacity, foreign competition, poverty, school drop-out rates, juvenile offenses, and the increasing lack of unskilled and semiskilled jobs. Vocational education has had and still has a relationship to unemployment in that it is used to temporarily remove substantial numbers of youth from the labor market, a fact which may be a partial explanation of the historically ambivalent attitude of organized labor towards vocational education. This aspect of vocational education or occupational training is perhaps hidden in present appeals for training. As Michigan's Director of Employment Security said:

> I suppose that is as good as any way of getting rid of the unemployed--just keeping them in retraining.[8]

Before continuing to accept a previously assumed relation between vocational education or occupational training and economic problems, the State of Hawaii needs to inquire into a few basic questions: (1) What is the relevance of both general education and occupational training to unemployment, technological change and other economic and social problems; (2) What is the relationship between general education (including occupational education as defined above) and vocational education and occupational training; and (3) What is the relationship of general education and occupational training to the development of a healthier and more democratic society? A realistic appraisal of these relationships requires an exploration of their history. In this manner a sounder basis may be provided for making determinations as to how vocational education, general education, and industrial society in the democratic state relate now and how they should relate in the future.

Relating Democratic Ideals to Industrial Requirements

A critical examination of the history and underlying assumptions of vocational education reveals a disparity between such education and the actual occupational requirements of the changing phases of the industrial system and a contradiction between such education and the accepted ideals of a democratic society. These underlying contradictions, discussed below, suggest the hypothesis that vocational education has served as an ideological bridge to reduce the very real tension between the ideals of democracy and the realities of industrialism. The dynamics of democracy have over time resulted in ever growing demands for extension of educational opportunity which is recognized as the road to status and development of human abilities. Increased demands for extension of educational opportunity coincided with the phase of industrialism which demanded the least of the worker in terms of general development and a variety of skills. As these almost diametrically opposed forces met, the vocational education movement emerged. The movement developed as an ideology capable of satisfying various, almost contradictory, forces and interests. On the one hand, it satisfied the demand for greater educational opportunity without at the same time actually offering to all the kind of educational opportunity which could be used for attaining occupational mobility, or higher occupational status. Without being fully democratic (i.e., giving to all the kind of education formerly reserved for the privileged and thus using the educational system to further an open class and more equalitarian society) it was widely heralded as a democratization of education--i.e., it dignified blue-collar occupations by awarding them a place in education. At the same time, it distracted attention from the tedious and dehumanizing jobs which scientific management and ever increasing specialization of labor were creating, by sustaining the notion that "education" in terms of completion of courses oriented towards skilled crafts was beneficial or essential preparation for industrial jobs. Additionally, vocational education served the interest of the teachers of academic subjects who were (and are now) faced with the problem of serving large numbers of children who were (and are) not responsive to the traditional academic education due to the character of their environmental (social, economic, class, geographic, ethnic or religious) backgrounds.[9]

Hawaii's experience. The hypothesis that vocational education functioned to ease the strains of the contradictory demands of democracy and the labor needs of industry is vividly illustrated in Benjamin Wist's history of public education in Hawaii and in Lawrence Fuch's social history of Hawaii.[10]

During the 1920's, secondary education opportunities were rapidly expanding. Some of Hawaii's more influential citizens desired to curtail education, which offered Hawaii's youth an escape from the plantation. A compromise was effected by Governor Farrington, the intent of which was to expand the high schools, but at the same time instruct the children in the dignity of manual labor and to use the curriculum to direct the children towards agriculture.[11] Nevertheless, the high school continued increasingly to draw youth from the plantation; the resulting hostility of some members of the oligarchy resulted in the 1928 decision to deny high school entrance automatically to 20 per cent of all junior high graduates. In 1930, Governor Judd appointed a committee to survey Hawaii's educational system and bring it more in line with the needs of industry. Charles A. Prosser, the dominant influence in the adoption of federal support for vocational education, was retained by an affiliate of the Chamber of Commerce to carry out the survey. The report recommended a drastic curtailment of academic and liberal educational opportunity and an expansion of vocational education.[12] The Prosser report went too far and was generally ignored except for its recommendations regarding vocational education, especially in agriculture[13] which were backed by plantation owners and managers when they saw that they were unable to stop the growth of the high schools.[14]

The Phases of Industrialization

One of the fundamental weaknesses of vocational education as known in the United States has been its lack of relevancy to the realities of an industrial civilization.[15] In order to grasp the extent of the disparity between vocational education and the realities of industrial life, it is helpful to set out schematically the evolution of industrial skills.

Division of labor in industrial society grew out of the medieval craft system; the first phase of industrialism resembled the organization of functions of the craft system. The important point about the craft system was that the same worker carried out all the processes necessary for one product,[16] and thus had to bring to his work knowledge of the qualities of raw materials to be used along with a certain flexibility of function necessary to complete a product.[17]

The first stage of industrialism continued the craft tradition in which a worker performed heterogeneous functions to complete a product but the machine was substituted for hand tools. The machine, however, was flexible; it was not limited to production of a single item.

In the second industrial phase, rationalization of production occurred. The operations formerly carried out by a single worker were broken up, machines became increasingly specialized, and increasingly less heterogeneous skills and knowledge of materials and processes were demanded of the production worker, while a premium was placed on speed, precision and dexterity.[18]

In the third industrial phase, direct productive work by human beings is eliminated, as machines are used to both feed, control and repair other machines. The characteristics required by the worker in this stage of automation are by no means clear, although manipulative skills appear to constitute a negligible component, while the worker's "capacity to integrate himself into the social group and take responsibility"[19] and the "individual's ability to memorize, concentrate, observe and follow direction"[20] are emphasized.

Obviously, these phases of industrialization have not taken place simultaneously in all industries or within the same industries. There are remnants of the craft phase remaining in even the more highly automated industries. However, an understanding of these phases of industrialism provides the basis for realistically approaching vocational education.

THE RELEVANCE OF VOCATIONAL EDUCATION

Vocational education in the public schools was introduced at a time when the extreme division of labor (the second industrial phase noted above) was clearly evident. As a matter of fact, the original vocational education movement itself recognized that:

> The American industrial worker is. . .becoming more unskilled. . . .Large scale production, extreme division of labor, and the all-conquering march of the machine, have practically driven out the apprenticeship system through which, in a simpler age, young helpers were taught not simply the technique of some single process but the 'arts and mysteries of a craft'. The journeyman and artisan have given way to an army of machine workers, performing over and over one small process at one machine, turning out one small part of the finished article, and knowing nothing about the business beyond their narrow and limited task.[21]

In effect, the vocational education movement stood in opposition to the inevitable and harsh facts of the industrial process. The movement hoped that by training skilled craftsmen the process could be reversed, or at least stemmed. It must be remembered in this connection that vocational education at that time, as now, was focused on development of the heterogeneous skills of the craftsman and that vocational educators considered such education as the center of the secondary school experience for all future industrial workers. That such thinking still permeates vocational education is demonstrated by the report of President Kennedy's panel of consultants on vocational education, wherein the need for expansion of vocational education is argued on the grounds that only a small percentage of the work force receives it.[22] Actually, the whole concept of the need for vocational education rests in large measure on the craftsmanship idea that the worker should have a whole range of skills--otherwise there would be no need for extensive training since single skills or a few skills can be developed in a very short period of time. As one student of the actual content of work puts the matter:

> Beyond simple job training, vocational instruction strives to give to apprentices a real understanding, in a rational form, of the processes which will permit the worker to adapt to a wide variety of skilled work. But this clashes with the brutal reality of millions of unskilled or semi-skilled jobs which require no general vocational training. Some honest observers even ask themselves if the good intentions of the educator do not tend to aggregate [sic] the difficulties of subsequent adaptation by accentuating the opposition which exists between the aspiration for a true skill or craft, and the usual trivial job in industry.[23]

The trend away from semi-skilled and unskilled labor and the present disproportionately high unemployment rates of the relatively unskilled, as noted previously, has been met by demands for expanded vocational education or occupational training opportunities. In turn, this has resulted in a demand to search out all potential occupations for which the craftsmen concept seems appropriate. Most of the new occupational areas, however, for which formal and extended training programs seem appropriate turn out to be at the technician level and thus require a basic background and understanding of mathematics and science. The reason for this dilemma lies in the very nature of the change in the industrial system, which is moving into the last phase noted above which theoretically will eliminate much of the direct productive work of human beings.

The point is not that occupational opportunities for the craftsman do not exist, but that these opportunities reflect only a fraction of available jobs. Yet vocational education has been and still is thought to be appropriate education for all those who will not pursue post-secondary education, despite the fact that most production jobs fell and many still fall in the unskilled or semi-skilled categories, and many jobs classified as skilled can be learned in a matter of weeks or months.

The addition of vocational education to the secondary curriculum was not only unrealistic but possibly harmful to many future laborers. It is difficult to see how spending high school years developing minimal skills required in the crafts and trades, which were unrelated to most jobs available in the industrial system to the otherwise uneducated, could have helped most industrial workers. Nor could it have provided meaningful, specific occupational training for the majority of future workers when what was required of many of them was sheer "labor power". Would it not have been far more beneficial to have provided these future workers with an education which gave them more occupational education in the sense defined above (for example, some understanding of the industrial system in which they would find themselves) than to teach hand skills which for many of them would be of no real relevance to the jobs they would eventually have to perform? In fact, the great mass of citizens has been able to adjust to the requirements of the job market without years of apprentice training or other extended occupational training.[24]

The Assumptions Underlying Vocational Education

At the inception of vocational education, the core of the educational philosophy of vocational educators was that future workers should have a different kind of secondary education from that of future professionals. The new secondary programs for workers should be primarily vocational, it was felt, with some elements of general education. It was assumed at that time that the essential general education necessary to live successfully in society could be provided by the time the youngster completed the eighth grade.

Vocational education itself, however, was thought to contain certain general education values for future workers. Thus it has been and still is assumed that vocational education keeps children in school, trains the intellect and democratizes education. Out of these has evolved a fourth, that vocational education actually is general education.

Keeping Children in School

In the first place, it has been assumed that vocational education would have greater holding power for the children of workers than would academic subject matter. This assumption was originally based on the arguments that: (1) working class children are chiefly concerned with future employment, and can be more highly motivated by the promise of occupational success suggested by vocational school work; (2) the parents of such children can see the practicality of vocational education and will therefore be more inclined to let their children continue their secondary education; and (3) work with their hands will be more meaningful and real and therefore more appealing to these children than would bookwork.[25]

Do vocational courses actually keep children in school who would otherwise drop out? There is really no definitive answer to this question.[26] The fact that the schools are still losing 30 to 40 per cent of their students before high school graduation in spite of the long existence of vocational programs in the country does not disprove the assumption, since more realistic or better financed vocational programs might have been more successful in keeping children in school. Nor does the higher drop-out rate from vocational than from academic programs disprove the assumption, since there are numerous other factors which induce school leaving in the case of youngsters who are in vocational programs. On the other hand, there is little to prove the holding power of secondary level vocational programs as contrasted to that of an academic program. Obviously, an academic program that is too difficult for a youngster will tend to force him out of school. But the real comparison should be made between the holding power of a general education program aimed at the ability level of the youngster as contrasted with the holding power of a sound occupational training program. The comparison cannot be made, however, until a full-time general education program, geared to the various ability levels and motivational characteristics of children, is attempted. There is evidence, however, that youngsters of high school age are not oriented towards earning a living; the problems of finding an occupation suitable to them seem quite remote to mid-adolescents.[27]

Training the Intellect

Secondly, it has been assumed that vocational programs actually train the intellect at least as well, if not better, than academic work because such programs are thought to be intimately related to life (by reproducing in the schools real work situations) and thus more readily hold the student's interest.[28] The silent assumption here seems to be that work situations involving manipulation of materials are more closely related to the life of children from lower socio-economic classes, while situations involving books and abstractions are more closely related to the life of professional's children.

There is little evidence to support the assumption that vocational courses train the intellect as well as academic courses. The idea arose at a time when psychologists were derisive of the learning theory underlying classical education which assumed the existence of "faculties" that could be trained through study of Latin and history, etc. The early vocational educators argued that there was no carry-over of training of general "faculties" from one field to another, but there was carry-over of the habit of "using resourceful and sound thinking procedures in dealing with facts," and that one subject was as good as another for developing such habits.[29] The soundness of allowing high school age youngsters to "elect" their program is based on these arguments for the "democratization" of subject matter. Today, attempts to organize new curriculums for primary and secondary education are based on the concept that intellectual power is developed through concentration on the basic concepts, core ideas, and underlying structure of the fundamental academic disciplines. It is thought that there are intellectual processes that are elicited and mastered through concentration on man's accumulated heritage of wisdom and knowledge as preserved and developed by these disciplines. If educators can now agree that all subjects are not equally useful in developing intelligence, then it follows that a reexamination of the present patterns of the elective high school program is called for.

Democratizing Education

Thirdly, it has been assumed that vocational education represents a democratization of education, since it is intended to give equal recognition and status within the educational system to what are considered to be the differing educational "needs" and "desires" of members of differing ability groups.[30]

The argument is often made that the secondary educational system at present is devoted primarily to serving the "needs" of the college bound student, that the importance of college attendance is greatly overstressed, that the "needs" of the student who will enter the labor market upon graduation are ignored. The conclusion drawn is that more and better vocational education should be added to the curriculum to serve the "needs" of the youth who will not attend college. This argument requires careful examination, for it contains fairly crucial unstated assumptions. The argument assumes first that the best preparation for immediate entrance into the labor market upon graduation from high school is some form or other of vocational education. A commentary on this assumption is provided by a report to the Portland, Oregon school district:

> Representatives of business, industry and unions indicated in interviews that they did not consider the high school responsible for producing fully trained potential employees. They indicated that what they expected was a person with basic intellectual aptitudes and achievements; good motivation; a willingness to apply himself; native skills and manual dexterity; graces and the ability to get along with others in particular; moral characteristics such as dependability, honesty and a willingness to work. They felt that it was sufficient if the schools produced a youth with ability in using the tools of learning--one who in fact had learned in a fundamental way at least, how to learn. Post high school training in technical schools, special trade schools, in-service training programs and the like should, they felt, produce the finished, trained or qualified person.[31]

From this point of view the adequacy of secondary education for non-college bound youth would be measured on the basis of whether or not it produced persons who had mastered basic intellectual skills and processes rather than whether it had produced persons trained in a particular occupational skill.

Secondly, the argument that meeting the "needs" of non-college bound youth requires an expansion of vocational education assumes that academic subjects now offered college preparatory students are specialized education of value primarily as a means of getting into college. The possibility is overlooked that the subjects now treated as specialized education for college preparation are the very subjects which could contribute the most to the development of those intellectual abilities in demand in the labor market.

Many of those who would agree that the college preparatory mathematics courses, science courses, history and foreign language courses are more conducive to intellectual development than other courses in the high school curriculum feel that these subjects are too abstract to offer to non-college bound youth. This argument in effect assumes two kinds of human nature, those for whom an abstract approach to learning is possible and those who can understand only practical applications. While this assumption about human nature may turn out to be empirically sound, it should be recognized for what it is: a latter day version of the ancient division of mankind into the drawers of water and hewers of wood on the one hand and the thinkers on the other hand.

In order to determine how democratic secondary level vocational programs are, it is necessary to examine how they affect the individual's opportunity for social or occupational mobility, or freedom of occupational choice. Successful completion of a well-designed general secondary education would greatly enhance an individual's freedom of occupational choice and increase his occupational mobility in American society today. Such an education is a prerequisite to college entrance and all the occupations requiring a college degree. Increasingly, it is a pre-requisite to successful occupational training for jobs above the semi-skilled level. Substitution of vocational courses for general education courses greatly restricts the freedom of occupational choice of the individuals taking such courses. In fact, the whole system of secondary level vocational education has operated as a device to allocate individuals to occupational levels and social positions in the society by relating the amount of general education a youngster will receive to his aptitude and achievement test scores. Those who register low scores are given the minimum required level of general education at the secondary level. This limits the occupational choice of such individuals to the jobs requiring less skill and education and offering less status. Furthermore, achievement and aptitude test scores are highly correlated with the environment of the child, that is, with the occupational and educational level of the child's parents. Consequently, when youngsters are given a minimum of general education and thus a restricted range of occupational choice, they are simply being guided into their parents' footsteps. Thus, the educational system in large measure fails to perform the democratizing role of providing opportunity for each individual to develop sufficiently to attain freedom of occupational choice.

The vocational education programs at the secondary level in fact provide a separate kind of education for children from limited-opportunity families. "In actuality, vocational education as it has developed in the United States has become more a reflecting of 'appropriate' training for working-class children than a manner of meeting their subsequent vocational needs."[32]

Providing General Education

Secondary level vocational education has increasingly viewed itself as broad, general education, despite the fact that it has not forsaken practical manipulative content to develop occupational competency through repetitive performance of real job tasks.[33] The formal distinction made by vocational educators between so-called "practical arts" education and "vocational" education is an expression of the idea that secondary level courses in manual skills are "general education". There are at least three logically separable aspects of the argument that there has been a growth of general education content or emphasis within vocational education.

First, there is the vocational educators' belief that they are presenting youth with "rich and broad exploratory opportunities"[34] in vocational subjects. This emphasis seems to grow out of the trend towards pushing the vocational training programs which are more specifically preparation for particular occupations to the post-high school level, as has been done in Hawaii, where "industrial arts" is offered in the secondary program and "trade and technical" education is offered at the post-high school level.

Secondly, there is the belief that the secondary level vocational subjects are in themselves a part of general education on the grounds that skills needed by every man are being taught, that every man should be able to participate in home and automotive repairs and minor carpentry and construction.[35] This appeal is partly used to attract the abler students to vocational courses, or even as an argument that such courses should be required for all students. However, in an age of specialization of function, it is questionable whether the educational system can afford to use its limited resources for such ancillary purposes. Permitting curriculum to include anything which might be useful avoids the problem of ordering priorities. Some subjects are inherently more important than others because they provide the basis for further growth and development. Some concepts are more important than others because they stand at the center of man's knowledge; mastery of them provides individuals with more powerful means of organizing experience and thus of understanding and dealing with the world in which they live.

Thirdly, there is an attempt on the part of vocational education to meet vocationally directed students' general education needs, including their need for occupational education. For example, the vocational education literature emphasizes the need to make vocational students aware of how rapidly skill demands are changing and to give them some understanding of the organizational structure of the productive system. A serious attempt to give youth an understanding of the productive system and of the role of agriculture, industry, business and the home would require courses based on economic history, sociology or political science. These disciplines provide the basic concepts and theoretical structure necessary to grasp the workings of the industrial order. It is not reasonable to expect courses of an essentially manipulative nature or teachers whose education has primarily prepared them to teach manipulative skills to produce insight into and understanding of the industrial system and the social system, although there are undoubtedly individuals who have developed such an ability.

Historically, the acceptance of "practical arts" as a normal part of secondary curriculum seems to have been a result in part of a blending of the vocational education movement with the emphasis placed by the progressive education movement on the use of concrete materials to elicit from children an active and involved engagement with the educational process.[36] John Dewey advocated a "vocational" approach to education. However, Dewey used the term "vocational education" in an entirely different sense than did the vocational education movement. His use of the term rested on the older conception of a vocation as a "calling" with all the exalted connotations connected with a devoted mission in life, or the central purposive activity which provides a focus around which one's efforts are organized. He conceived of vocations as changing as the individual advanced through life. The concept of "vocation" was adapted by Dewey to education. He thought that by organizing curriculum around the "vocations" of children it would be possible to turn children from passive listeners into active participants. Working with concrete materials was suggested for younger children since their natural vocation was play with objects. Such work was never intended by Dewey to serve the end of development of manual dexterity, although development of manual dexterity would naturally result; rather, Dewey had in mind using such materials as a means for developing intellectual capacity and for promoting interest in and understanding of man's history of work and thought. The following quotation illustrates Dewey's concept of "vocational education":

> . . .the children are first given the raw material--the flax, the cotton plant, the wool as it comes from the back of the sheep (if we could take them to the place where the sheep are sheared, so much the better). Then a study is made of these materials from the standpoint of their adaptation to the uses to which they may be put. For instance, a comparison of the cotton fiber with wool fiber is made. I did not know, until the children told me, that the reason for the late development of the cotton industry as compared with the woolen is that the cotton fiber is so very difficult to free by hand from the seeds. The children in one group worked thirty minutes freeing cotton fibers from the boll and seeds, and succeeded in getting out less than one ounce. They could easily believe that one person could gin only one pound a day by hand, and could understand why their ancestors wore woolen instead of cotton clothing. Among other things discovered as affecting their relative utilities was the shortness of the cotton fiber as compared with that of wool, the former averaging, say, one-third of an inch in length, while the latter run to three inches in length; also that the fibers of cotton are smooth and do not cling together, while the wool has a certain roughness which makes the fibers stick, thus assisting the spinning. The children worked this out for themselves with the actual material, aided by questions and suggestions from the teacher.
>
> They then followed the processes necessary for working the fibers up into cloth. They reinvented the first frame

> for carding the wool--a couple of boards with sharp pins in them for scratching it out. They redevised the simplest process for spinning the wool--a pierced stone or some other weight through which the wool is passed, and which as it is twirled draws out the fiber; next the top, which was spun on the floor, while the children kept the wool in their hands until it was gradually drawn out and wound upon it. Then the children are introduced to the invention next in historic order, working it out experimentally, thus seeing its necessity, and tracing its effects, not only upon that particular industry, but upon modes of social life--in this way passing in review the entire process up to the present complete loom, and all that goes with the application of science in the use of our present available powers. I need not speak of the science involved in this--the study of the fibers, of geographical features, the conditions under which raw materials are grown, the great centers of manufacture and distribution, the physics involved in the machinery of production; nor, again, of the historical side--the influence which these inventions have had upon humanity. You can concentrate the history of all mankind into the evolution of the flax, cotton, and wool fibers into clothing. The occupation supplies the child with a genuine motive; it gives him experience at first hand; it brings him into contact with realities. It does all this, but in addition it is liberalized throughout by translation into its historic and social values and scientific equivalencies. With the growth of the child's mind in power and knowledge it ceases to be a pleasant occupation merely and becomes more and more a medium, an instrument, an organ of understanding--and is thereby transformed.[37]

Dewey himself was well aware of the dangers of separate courses in manipulative skills aimed either at preparing individuals for occupations or for orientating them towards the highly task differentiated occupations of the modern industrial order. He warned that introduction of such courses into the normal school curriculum would perpetuate and harden the division of man into those prepared only to carry out the tasks set for them by others and those who participated in the creation and perpetuation of culture. The following quotation from Dewey deserves the careful consideration of all those who advocate meeting the "needs" of non-college bound youth with additional vocational work, whether "practical arts" or occupational training. In this passage, Dewey first differentiates his conception of vocational education from that of the vocational education movement. He wrote:

> A vocation signifies any form of continuous activity which renders service to others and engages personal powers in behalf of the accomplishment of results. The question

> of the relation of vocation to education brings to a focus the various problems previously discussed regarding the connection of thought with bodily activity; of individual conscious development with associated life; of theoretical culture with practical behavior having definite results; of making a livelihood with the worthy enjoyment of leisure. In general, the opposition to recognition of the vocational phases of life in education (except for the utilitarian three R's in elementary schooling) accompanies the conservation of aristocratic ideals of the past. But, at the present juncture, there is a movement in behalf of something called vocational training which, if carried into effect, would harden these ideas into a form adapted to the existing industrial regime. This movement would continue the traditional liberal or cultural education for the few economically able to enjoy it, and would give to the masses a narrow technical trade education for specialized callings, carried on under the control of others. This scheme denotes, of course, simply a perpetuation of the older social division, with its counterpart intellectual and moral dualisms. But it means its continuation under conditions where it has much less justification for existence.[38]

Dewey then contends that present social conditions make it at last possible to overcome these dualisms through an educational use of the interconnections amongst science, industrial life and social organization. He continues:

> For industrial life is now so dependent upon science and so intimately affects all forms of social intercourse, that there is an opportunity to utilize it for development of mind and character. Moreover, a right educational use of it would react upon intelligence and interest so as to modify, in connection with legislation and administration, the socially obnoxious features of the present industrial and commercial order. It would turn the increasing fund of social sympathy to constructive account, instead of leaving it a somewhat blind philanthropic sentiment. It would give those who engage in industrial callings desire and ability to share in social control, and ability to become masters of their industrial fate. It would enable them to saturate with meaning the technical and mechanical features which are so marked a feature of our machine system of production and distribution. So much for those who now have the poorer economic opportunities. With the representatives of the more privileged portion of the community, it would increase sympathy for labor, create a disposition of mind which can discover the culturing elements in useful activity, and increase a sense of social responsibility.

> The crucial position of the question of vocational education at present is due, in other words, to the fact that it concentrates in a specific issue two fundamental questions: Whether intelligence is best exercised apart from or within activity which puts nature to human use, and whether individual culture is best secured under egoistic or social conditions.[39]

The Reexamination of Vocational Education by the President's Panel

President Kennedy's panel of consultants on vocational education recommended an expansion of vocational education at the secondary level as well as at the post-high school level. Recognition is given in the report to the need for more specific vocational education or occupational training at the post-high school level. This need is a product of the growing complexity and sophistication of jobs for which training is appropriate. At the same time it is recommended that course content at the high school level be based on "an analysis of the occupation for which training is to be given."[40] The panel qualifies this recommendation when it notes that:

> Basic vocational education programs should be designed to provide education in skills and concepts common to clusters of closely related occupations. The curriculum should be derived from analyses of the common features of the occupations included. These students should receive specialized or more advanced vocational training later in post-high school programs, apprenticeship, or on-the-job experiences.[41]

The panel appears to recognize that early vocational education is not really feasible, since the occupations for which extended training is needed generally require a higher level of basic education (a full twelve-year period) but nevertheless it recommends that some children should be directed towards vocations through participation in prevocational programs at an early age. In practice, these recommendations would seem to result in a situation similar to the present practice in Hawaii, of giving students several years' exposure to "prevocational" programs such as electricity or wood shop, to be followed by several years of apprenticeship. Becoming a journeyman by this route means foregoing many alternative educational opportunities as well as involving large expenditures of human and material resources in pursuit of a limited objective.

The panel reiterates the "need" for more vocational education on the grounds that most of the employed do not now receive it. For example:

> Distributive education enrollment is exceedingly small when compared with the 20-64 year age group. . . .Employment in the occupations served by distributive education is large, which suggests that this program needs to be vastly expanded to serve a larger proportion of the employed workers.[42]

> The panel also found that vocational education programs are not preparing people for enough kinds of jobs. One study which compared vocational education enrollments with subsequent occupational employment found that only 10 boys studied vocational agriculture for every 100 males employed in that field. The ratios were even less satisfactory in wholesale and retail trade (1:200) and manufacturing and construction (2:444).[43]

It is not clear, however, whether or not the panel means that all these employed workers who have not had vocational education lack competence in their jobs.

The panel recognized that technological change creates a continually changing pattern of skill requirements. It noted:

> Skills and technical knowledge of varying degrees of complexity will be required in many different occupations. The skills required and the occupations involved may change drastically from year to year and from one area of the country to another.[44]

This would seem to argue that occupational education, as defined at the outset of this study, is required so that future workers would be psychologically prepared to change their occupations and flexible enough to meet new employment demands. It also suggests that most of the actual occupational training, i.e., the development of the particular manipulative skills required for any particular job would almost necessarily have to be provided on-the-job or immediately prior to employment. The panel, however, moves in the other direction:

> In recent years, there has been a growing movement by industry to remove related classroom instruction for apprentices from the public vocational educational institutions and to establish it in private facilities supported jointly by labor and management in the industry. It is, therefore, of utmost importance that a careful evaluation be made of the existing deficiencies and of the action necessary in order to return these programs to the public vocational educational facilities.[45]

The panel recommends expanding high school level vocational programs at the same time; however, it recognized that "research has been conspicuous by its absence in vocational education," that "little investigation has been made of the needs for vocational education and the types of service required to satisfy those needs," that "research of an evaluative type, which is fundamental to sound development, has been also very limited," that "little or no evidence has been gathered regarding the results of effectiveness of the instruction given, and various rationalizations and excuses have been offered over the years for inadequate program statistics." These comments on research are immediately followed by the sentence: "Investment in vocational education is today grossly incommensurate with the national interest and federal responsibilities."[46]

The panel of consultants, it should be noted, did not address itself to some of the more basic questions, such as: why there should be more vocational education at the secondary level; how vocational education can in fact be realistically related to actual labor market demands; what skills and concepts are common to closely related occupations at the vocational level or what clusters of closely related occupations at the vocational level exist in fact; why the public should assume major responsibility for specific occupational training; what should be the role of private employees in vocational education; why vocational educators as a separate entity rather than general educators should be given responsibility for the actual occupational education needs of the society; how the secondary systems can teach relevant occupational skills, when the organization of production, the machinery used, and the job classifications vary so enormously and change so rapidly.

Some Implications of Technological and Societal Change

A study of vocational education today must necessarily take into account automation, cybernation and technological change and the economics of unemployment.[47] A review of the literature shows that it is not yet clear precisely how automation is presently affecting labor market demands or just how it will affect them in the future.[48] There are substantial arguments both for and against the idea that automation and cybernation are contributing to present unemployment rates.[49] There is evidence that automation both increases and decreases the skill requirements of the labor market,[50] and that the amount of increase and decrease varies depending on the kind of industry or production process adopting automation and upon the degree to which the industry or production process is automated.[51] There are, however, several key facts which seem to enjoy general agreement and are essential considerations for intelligent reappraisal and reorganization of occupational training. These facts are:

(1) An increasing proportion of the occupational categories require higher levels of education;[52]

(2) A large number of individuals leave the public school system without sufficient general education to enable them to qualify for jobs of even the less demanding level, let alone the kinds of technical competencies which quite clearly are in increasing demand in the labor market;[53]

(3) The ability of the economy to provide an ever-increasing quantity of material goods with an ever-decreasing quantity of labor;[54] and

(4) The increasing political complexity of the world which requires the citizens of a democratic state to have a more sophisticated understanding of politics, government, economics and science than now characterizes most persons who leave the secondary systems, with or without a diploma.[55]

Higher Educational Requirements

The probable decrease in opportunities for semi-skilled and unskilled labor presents the educational system with the need and the opportunity to raise the general educational level of a larger proportion of children sufficiently to make them capable of undertaking college or post-secondary semi-professional or technician's programs of a rigorous nature. The following chapter indicates that in Hawaii the strong emphasis on vocational courses in the secondary schools, especially in the rural schools, tends to interfere with achieving this goal. Early vocational education and training and retraining programs are not going to be able to make up for a lack of basic general education. The real short-run problem is to conserve more of the talent of society by enabling ever-increasing numbers of persons to reach higher levels of educational development. The present stage of technological development makes it unnecessary to worry about over-educating people for the kinds of work that will be available, one of the concerns which was at the heart of the original vocational education movement as noted above.

The fact that too many persons lack the basic communication skills necessary as a basis for any level of occupational training (e.g., the Manpower Development and Training programs have had to deal with this situation by providing supplementary basic education) suggests that the optimum secondary program for persons lacking in ability to take a typical secondary level academic program would be an intense concentration on the development of communication and related skills for living. Hopefully, sometime in the future, the primary system will be able to perform the job of teaching basic communication skills to all students.

In the meantime, however, the secondary systems are presented with the problem of providing a meaningful curriculum for the large numbers of youngsters lacking in communication abilities. The needs of society as well as the demands of the labor market strongly indicate that the most useful assist the secondary system could make to these youngsters would be to raise the level of their communication skills.

Increasing Complexity of Society

In view of the growing societal complexity there is an urgent need for a reappraisal of what it requires to produce reasonably competent citizens as high school graduates, and to reorganize the secondary curriculum with this objective clearly in mind.

The Senate Subcommittee on Employment and Manpower put it as follows:

> The basic intellectual tools provided by formal education have become the prerequisites of successful training. . . . The time has arrived in our complex world when the elementary and high schools have all they can do to inculcate in the student rationality, creativity, and the fundamental skills necessary for communication and computation.[56]

Guiding some students away from general education, inadequate as it may be, towards vocational education programs during their high school years does not begin to give such youngsters the educational competency required of a citizen of a modern democratic state.

The Problem of Leisure

The capacity of our industrial system to produce more and more goods with less and less labor again suggests the need to reappraise secondary education from the viewpoint of what it contributes to the individual's ability to use his life constructively. What this seems to imply for the long-range objectives of the secondary system is that the vocational training objective needs to be reexamined in the light of the need to develop all persons' capacity to enjoy and contribute to activities formerly reserved for a leisured elite. Increased amounts of leisure time provide both the opportunity and the necessity for greater emphasis on non-instrumental educational goals, such as enlarging individuals' capacities for contributing to the creating of the values which are uniquely human, rather than producing occupational competency. The question then must be raised whether the educational system can successfully work towards such objectives if its energies are diverted to premature efforts at occupational preparation.

Changing Meaning of Work

Occupational education was defined at the outset of this chapter as that part of general education which enables an individual to lead an effective work life. Vocational training, as it has existed since the passage of the Smith-Hughes Act, has not effectively performed this function because it has focused on the manipulative skill developments inherent in the concept of the craftsman. The true craftsman is conceived as an individual with the full dignity accruing from performing meaningful work since the craftsman plans his own work, determines how the work is to be carried out, and has the knowledge and flexibility to carry out an entire productive process. However, work loses this kind of meaning and dignity for the production worker when it is divided so that engineers and planners perform the cognitive function and the worker is left merely to carry out orders and perform tasks which are related to the completion of a product in a way the worker may not even understand. The resulting problem of alienation has been treated extensively by sociologists and other writers on the industrial system.[57] One suggested answer to the problem is to increase the worker's sensitivity to an awareness of the social structure (the organization) which cooperatively produces a product. The emphasis on knowledge of social organization appears increasingly reasonable as an objective for occupational education as technology and, in particular, automation, increasingly removes the worker from the actual mechanical organization of production itself. This concept of occupational education as a means for reinstating the sense of meaning and purpose to the work life remains to be more fully explored.

Another approach to the problem of meaning in work is to deny the possibility of ever again making productive work in the traditional sense a meaningful center of the individual's life, but rather to so educate the individual that he can productively and meaningfully use his non-work time.

A realistic educational system should attempt to grapple with these larger problems in planning its occupational education, rather than assuming that vocational education as traditionally conceived can effectively cope with the problem of meaning in work on the basis of an obsolete conception of the organization of work.

Chapter III

VOCATIONAL TRAINING IN HAWAII SECONDARY SCHOOLS

The initiation, growth and modification of vocational programs in Hawaii secondary schools have generally followed the lead of developments nationally. Vocational programs are perhaps the area of education in which the federal government has had most influence in the shaping of theory and practice. Through the use of federal funds, the Congress of the United States and the federal administration have encouraged the adoption of vocational programs and have determined the direction of their expansion and modification. While vocational training in Hawaii has much in common with programs throughout the nation, there are unique characteristics due to local conditions. The data in this chapter reflect the acceptance of many of the national patterns of thought and some of the differences.

This chapter describes secondary level vocational programs in Hawaii public schools. There does not exist much statistical data upon which to base such a description. Lack of such data is common throughout the country.[1] In addition to statistics available from the Department of Education, other data were compiled through the use of questionnaires and interviews, and by examining basic department records. Sufficient information was collected to provide general insights into the nature of the effects of operational vocational education programs and the beliefs and values of individuals in the system (administrators, teachers, and students) in relation to such programs.

Efforts to collect data were concentrated on: (1) formal and informal views of the reasons for having vocational courses; and (2) how much of the educational system's resources are devoted to the vocational areas. A major purpose in collecting the data was to determine whether the persons who play the crucial role in assigning students to courses (counselors and registrars)[2] and those responsible for determining what courses the school will offer (principals) accepted the usual assumptions made about vocational education. A further purpose was to determine on what basis these key persons in the school system felt students should be assigned to vocational courses, and what they felt were the benefits of such work.

Results from the questionnaires and interviews indicated that in Hawaii, secondary school vocational courses are perceived as the appropriate courses for individuals who are judged to be non-college bound, or those for whom the appropriateness of college is in question. It appears that vocational courses are seen by counselors and principals as "specialized" education for the non-college bound corresponding to the academic courses considered to be the "specialized" education for the college bound. There was considerable evidence that these courses were viewed as "pre-requisites" to post-high school trade or technical school work. At the same time, counselors and principals expressed the contradictory view that the vocational courses didn't prepare children with entry level skills for any specific occupations. When pressed to explain how vocational courses were related to future occupations or future training for occupations, the respondents expressed uneasiness and discontent with the state of education for the non-college bound.

A determination of the weight currently given vocational courses in the public school system is necessary to any discussions regarding the future of the program. The data collected indicate that the Hawaii secondary system places a heavy emphasis on the vocational areas, but that the emphasis on vocational subjects varies from school to school.

Definitions

Intermediate and senior high school courses in agriculture, business education, home economics and industrial arts, as noted earlier, are considered in this study as vocational courses. Students who take either a series of courses in one of these four vocational fields or several courses in more than one of the four fields are considered to be vocationally tracked students. The series of courses such a student takes, including any academic subjects, is his program of study, while teachers of vocational courses will be referred to as vocational teachers.

The courses offered under the four vocational fields are considered as a single entity because: (1) they are organized to reflect occupational categories rather than academic disciplines, (2) they are commonly viewed as the appropriate courses for those who appear unlikely to go on to college, and (3) they are the administrative responsibility of a separate vocational education division within the Department of Education.

The definition of vocationally tracked students is somewhat arbitrary due to departmental policy discouraging the formal use of tracks. Students must accumulate a minimum of 18 (course) credits during grades 9 to 12 to graduate from high school. Of these, 11-1/2 are mandatory courses (no vocational courses are included) and 6-1/2 elective. On a numerical basis, the student taking 3 or 4 vocational courses might be classified as vocationally tracked. This is more likely to be true the larger the school and the wider the range of available elective offerings. In small secondary schools the number of vocational courses may not be an accurate definition because the schools' offerings are so limited that all students (college preparatory and non-college preparatory) must take several vocational courses to fill out their program. School personnel can identify the students that are considered vocational on the basis of test scores, grades, and observation although such students are not sorted out in separate classes. In larger schools, vocational students do make up the largest part of the membership of most vocational classes and, in addition, are offered a different quality of academic courses. The official stand of the department is that tracking is forbidden. The realities of the course structure, the prior education of youth, the differing abilities of students, and the attitudes of school personnel result, however, in the existence of some form of tracking in student programming in every secondary school.

The Administrative Separateness of Vocational Education

The administrative separation of the vocational fields from the rest of the public school programs has its origins in the provisions of the Smith-Hughes Act which created a Federal Board of Vocational Education outside of the United States Office of Education and which mandated that any state receiving federal funds under the Act designate or create a State Board of Vocational Education.[3] The separate administrative structure was an outgrowth of the original conception of vocational education as a separate kind of secondary program appropriate to the future laboring class. Further, in 1917, separate administration was believed necessary if the vocational point of view was to predominate in the new programs.[4] Maintaining a separate administrative structure has tended to insulate vocational educators from the main stream of evolving educational thought; at the same time, widespread and unquestioning acceptance of the usual assumptions made about vocational education has perpetuated the educational organization which separates vocational from general education.

The Hawaii Organization

The division of vocational, post-high and adult education provides administrative leadership and supporting staff for the vocational programs offered at the secondary level. In addition, it has been responsible for Hawaii's technical schools[5] and other adult education activities. Four program specialists and their supporting staff in the division develop and review curriculum in the four vocational areas. Each of these specialists tries to visit every school once or twice a year to review the courses offered in his field and offer suggestions to the teachers. However, the specialists do not enforce a standard curriculum in their subject field. They can and do advise teachers and report observed laxness or incompetence in teaching to the principal or district superintendent; their sphere, however, does not go beyond advising and guiding. This is consistent with the curriculum philosophy of the department which calls for a central state staff to prepare basic curriculum, set general guidelines, and develop related material but delegates some degree of latitude for flexible adaptation to the classroom teachers.

Consequences of Vocational Separateness

The separation of occupational education goals of secondary education (which takes the form of separately administered vocational programs) from general education goals encourages the attitude that the primary duty of the secondary school towards students who will not be going to college is to prepare them for an occupation, or to prepare them for a post-secondary occupational training program. The belief in the need for occupational preparation tends to diminish the importance attached to the job of introducing the non-college student to the subjects that would enhance his ability to participate effectively in the cultural and political life of the community.

The separate administrative structure maintained for vocational programs makes it especially difficult to evaluate the importance of vocational courses within the total high school curriculum. The maintenance of four vocational fields means, in smaller schools, that the vocational teachers and the courses they offer gain undue importance relative to the whole school program. Indeed, it may mean that even the college bound youngster is denied realistic curriculum choices in mathematics, the natural sciences, the social sciences, and the humanities. For example, such a youngster may be required by lack of available general education courses to replace a four-year language program with some vocational courses. In only nine of the thirty-one high schools in the State can a student take more than two years of a single language (Table 1, Appendix A). In fourteen high schools, a student cannot take two years each of two languages. However, the college bound student will at least have some future opportunities for intellectual and cultural exposure, so these curriculum weaknesses might well be viewed as less limiting to the college bound than to the non-college bound.

Chapter II discussed the tendency of vocational educators to define vocational education as general education. Unfortunately, the dominance of the vocational orientation (i.e., dominant emphasis on the need to prepare students for particular occupations through manipulative skill training) prevents developing the more general education values of vocational courses through a consideration of: (1) what general education really is, (2) what kinds of exposure to agriculture or industrial processes or home economics every student needs to be an educated person, and (3) what aspects of the vocational programs therefore could or should be integrated into the general education curriculum.

Institutionalizing Vocational Training

Any established institution develops a stake over time in its customary ways of doing things, and its established view of what it should do. Educational institutions are no exception to this generalization, and this is in part desirable because one of their primary functions is to ensure cultural continuity. However, in the case of vocational or occupational training (as distinct from general occupational education) this natural tendency poses a serious problem. Occupations change rapidly, and jobs or occupational categories number in the tens of thousands. Thus, genuine occupational training has to be extraordinarily sensitive to changes in the organization of production. The lack of responsiveness to change of institutionalized vocational training is demonstrated by maintenance over time of the basic categories of vocational education established in 1917 despite enormous changes in the labor market profile. Another illustration of the same phenomenon is the way in which industrial arts courses reflect trade school courses despite attempts made to distinguish the two.

Objectives of Vocational Programs

One of the tasks set by the legislative resolution for this study was to evaluate present vocational programs in the light of the objectives they are currently intended to serve. Pursuant to this directive, the administrators responsible for the vocational fields in the secondary schools in the central office of the Department of Education, the principals of the secondary schools, and counselors responsible for guiding students into vocational courses were interviewed and given questionnaires in order to determine what they considered to be the objectives of the programs. The data collected indicate that there is a general lack of clarity throughout the school system on objectives. There is a tendency to cover the confusion that exists about objectives with the notion that not only do the various fields and courses within these fields vary, but also that course objectives vary depending upon the individual "needs and desires" of the students who take such courses. Furthermore, there are both formal and informal objectives for vocational programs. The formal objectives of the vocational programs are:

(1) to prepare a youngster for an entry level job, i.e., genuine vocational training;

(2) to prepare a student for post-high school vocational or technical training, i.e., prevocational training;

(3) to enable a youth to expose himself to a sufficiently large number of occupations or occupational areas so that his eventual vocational choice will be based upon a discovery of actual ability and interest, and knowledge of what is involved in an occupation, i.e., exploratory education; and

(4) to give each student that which is deemed essential to his becoming a well-educated man or woman, i.e., general education.

Generally speaking, the professional vocational educators have tended increasingly to minimize the actual vocational training objective in favor of the prevocational and "exploratory" education objective. This has been done on the grounds that high school age youth are not sufficiently mature to train for the trades, that insufficient time is available for serious trade preparatory work, and that it is not feasible to equip every high school adequately to provide occupational training programs. Furthermore, it was believed that the labor market has little interest in the 18-21 year old group. Principals, on the other hand, seem often to entertain the idea that more genuine occupational training should be offered high school age youth.

Informal Objectives of Vocational Programs

Discussion with school personnel indicates that these programs are perceived by Hawaii educators as serving purposes other than the formal ones listed above. School personnel will often offer other reasons for the existence and necessity of these programs when it is suggested that the formal goals are not met (the provision of genuine occupational training, for example), or that, in the nature of things the goal cannot be met (genuine and meaningful exploration of all potential occupations, for example). Fundamental to these informal justifications or purposes is the conviction that the educational system has large numbers of youth who are intellectually incapable of any other form of work. It is said that the vocational courses hold children in school so that the educational system has more opportunity to impart some reading and computational skills. Finally, existence of the vocational programs soothes the democratic conscience by offering something for everyone, a program for the non-college bound as well as for the college bound.

Objectives of Each Program

Within this wide range of objectives, each of the four vocational fields has tended to emphasize one or more of them. The central administration of the Department of Education and the high school principals sometimes hold differing views of the objectives of the programs. The principals' views of the objective of vocational courses are recorded in Table 2, Appendix A.

Agriculture

The agriculture program is in a sense both the most and the least vocational of the four fields under consideration. In order to qualify for Smith-Hughes funds, the agriculture program must provide entry level training.[6] The placement records which must be kept for agricultural students, however, show that only a fraction of these students enter this sector, and of those who do, most are engaged as plantation employees (Tables 3 and 4, Appendix A). In informal discussion, the objective of many of the agriculture courses is said to be to keep unsuccessful and disturbing youngsters busy and to teach them some discipline and the value of work.

The 1963 Vocational Education Act was intended in part to encourage entry level occupational training at the high school level. In the field of agriculture, it was thought that this could best be done by redefining agricultural occupations to include any occupation which utilizes knowledge of agriculture, whether on the farm or off, including producing, processing and distributing of agricultural products. In order to take advantage of these broadened provisions for use of federal funds, a Department of Education project was initiated which involved contacting prospective employers and persuading them to give on-the-job training to some boys. The jobs sought (nursery and garden shop jobs, driving and delivering produce, maintaining grounds, working in feed mills) had only a remote relation to agriculture and involved very little knowledge of the subject. These jobs most frequently are the kind of pick-up jobs which persons entering the labor market, both with and without high school education, have managed to get themselves in the past.[7] That program was dropped after one semester of operation. In that and other such programs, the school system appears to be directing some of its energies toward becoming a placement bureau or employment office. It is open to question whether this constitutes an optimum use of the limited resources available to secondary education. The real danger in the work-study approach, however, results from accepting the narrowly vocational objective of getting an individual placed in a job and usually a simple, entry job, at that. The broader view would center upon the objective of giving individuals an opportunity to explore as students, not as potential employees, as wide a range as possible of the organizations and institutions of the adult community, from factory to hospital. These students would be seeking to learn about the various roles persons play in society, the social organization of institutions, and the human life cycle from birth to old age.

In spite of legal requirements that vocational agriculture courses be genuine occupational training, two-thirds of high school principals in schools offering vocational agriculture courses view the first year of vocational agriculture as exploratory or general education, 40 per cent view the second year as general education, and 27 per cent view the third year as general education (Table 2, Appendix A). Only 3 per cent view the first year of vocational agriculture as occupational training, 14 per cent view the second year as such, and only 30 per cent view even the third year as occupational training. Interestingly, more principals view the first, second and third year vocational agriculture programs as preparation for post-high school training (30, 46 and 43 per cent for the respective years).

For all courses offered in agriculture, 58 per cent of responses indicated a belief that the objective of agriculture courses is general education, 30 per cent of responses view various courses as preparation for post-high school work, and 12 per cent of responses view these courses as occupational training.

Only 3 per cent of vocational agriculture students graduating from high school in June, 1963 (9 in all) continued their education in agriculture colleges the following school year (Table 3, Appendix A). Only 10 individuals who took vocational agriculture courses and who have been out of school six to ten years prior to 1964 actually continued their education in agriculture at a post-high school level (Table 4, Appendix A). The view of many principals that these courses are appropriate preparation for post-high school agricultural work is not supported by placement data. Of 1,618 vocational agriculture students who graduated during that period, 1,253 (77 per cent) are in the armed forces, in non-agricultural occupations, deceased or unaccounted for in contrast to 365 (23 per cent) engaged directly in farming or related occupations of whom 305 are working on farms and plantations for wages or in occupations related to farming.

Business

The business program comes closest of the four fields to being actual job training. The program specialist in business considers the high school program a satisfactory basis for an entry level job for the student who applies herself while in high school to developing typing and shorthand skills. There are no placement records for business students with the exception of distributive education students,[8] so it is difficult to ascertain how successful the program is in preparing students for immediate employment. The placement records for distributive education and office occupations (Table 5, Appendix A) indicate that less than half of the June graduates are employed or available for employment the following fall of whom approximately three-fourths are employed in the occupation for which trained.

The data must be interpreted with some care for the individual trained in typing and shorthand could be hired as a file clerk and still be counted as employed in the occupation for which trained. It appears, however, from the opinions expressed in the field, that very few youngsters develop saleable skills by the time they graduate from high school and most enter the distributive or office occupations at an entry level requiring little or no special skills.

School personnel view the objective of the business curriculum differently than do the central office administrators (Table 2, Appendix A). Business courses are viewed by principals as preparation for post-secondary business school training (41 per cent of responses indicated business courses were so intended) or as general education (39 per cent), while only 20 per cent of responses indicated a belief that the courses served as occupational preparation. The courses in which students are most heavily enrolled (typing, shorthand, general business, and business mathematics) are predominantly viewed by principals as general education, perhaps because of the general utility of typing and shorthand.

As in agriculture, a conception of business courses in high school as appropriate preparation for business majors in college seems to be operating. In fact, training for managerial levels increasingly rests on strong preparation in liberal arts and science, and not on any premature focus on high school business courses. It would seem reasonable to suppose that even those students aiming for secretarial careers and planning to attend post-secondary business schools are likely to be more successful in such jobs if they master general cultural and intellectual skills.

Home Economics

Home economics is the least vocational of the four fields for its intention is to prepare girls (and now boys as well) to cope with the problems of life, and in particular, family life, common to all. The thrust of the program is towards developing a set of attitudes (called by the educators "understandings") and values which are intended to help youngsters solve problems in a "socially acceptable fashion". Both the central office and school personnel view the field in similar terms.

Despite the "general education" slant of formal statements of objectives in home economics, the subject matter of the courses has necessarily evolved out of the original home economics emphasis on development of skills such as cooking, sewing, cleaning, and home decorating, which are used in the "vocation" of homemaking. It appears from the curriculum that the result of adding social values orientation to a program of practical skill training in homemaking is an emphasis on middle class modes of propriety in table setting, home decorating, manners, clothes, marital relations and child care. The question is whether further curriculum developments can go beyond teaching the dominant modes of behavior in regard to family life (the how to do it approach) to creating insight about interpersonal relations, the family system, small group relations, or consumer economics such that a greater range of knowledge choice, and a greater potential for relatively autonomous decision making in those areas is realized. It may be that such an objective could be more feasible if home economists received greater aid from the social sciences.

The Department of Education planned to provide classes intended to make women employable in home economics fields: (1) home services, including such jobs as housekeepers and baby-sitters; (2) food services, including waiting and other jobs below the management level; (3) nursery and child care services, including nursery school, baby-sitting, and child care helpers; and (4) nursing services below the practical nurse level, including such jobs as companions to elderly persons or convalescent care. Superficially, this appears to be a good start for utilization of the new federal funds. It is intended, however, that only girls of average or above ability will be admitted to these programs. The question should be raised whether such students should be diverted into such programs at high school age, since this is a group which might be relatively easily inspired to more challenging occupational goals and who might more readily respond to stimulating general education courses.

This recent development in the home economics field illustrates one of the dilemmas posed by the whole concept of early vocational training. At least average if not superior students are sought as candidates for such training; yet directing such students towards specific vocations at an early age results in an underutilization of human talent, since it may preclude the opportunity offered during the high school years for more general development.

Industrial Arts

Industrial arts, is the most misunderstood of all the vocational fields. The department intends the high school industrial arts program as exploratory, general education or prevocational training; therefore Smith-Hughes moneys for trade and technical training are not available. The department's view is based on its feeling that high school youngsters are too immature to train for the trades. Furthermore, it is said that the high school program offers insufficient time to do any serious trade preparatory work. Nevertheless, teacher misunderstanding of the goals of industrial arts is more than understandable since their courses are organized on the basis of trade school subjects[9] and are in fact manipulative skill training courses, as a review of some of the curriculum guides in this field reveals. For example, the auto mechanics guide begins with the statement that since automobiles are so important to our way of life, "every boy and girl should become familiar with the operation, construction, maintenance, repair and adjustment of automobile components." While the guide notes that emphasis should be on understanding principles and concepts rather than manipulative skills, the emphasis of the course outline is on skills and processes involved in car repair.

Industrial arts courses are viewed by principals as well as by the central administration as primarily general education and exploration, and secondarily as preparation for post-high school trade school work (Table 2, Appendix A). However, a small percentage of responses indicated a belief that some courses were occupational training. In this context it should be noted that all high school principals were asked to draw up an ideal secondary program for preparation for technician training and a separate program for vocational trade training. Almost without exception, the principals did not differentiate between these two levels, although technician's programs demand competence in mathematics, science and English.[10]

Perceptions of Vocational Education in Hawaii

A more detailed view of the generally accepted objectives of vocational education, the reasons for maintaining vocational programs at the secondary level, the benefits believed to be derived from them, and the extent of satisfaction with Hawaii's vocational programs was gained from a questionnaire answered by each high school principal, registrar and head counselor. The results of this questionnaire and the conclusions to be drawn from it are presented below in brief (Table 6, Appendix A presents the complete results of the questionnaire and also reproduces the questionnaire itself).

General Objectives

Response to the questionnaire indicates clearly that vocational programs are viewed as the best kind of preparation at the secondary level for post-high school trade school work and for post-high school collegiate-technical work. The adherence to this view is well-nigh universal in spite of the lack of coordination of high school and technical school programs, and in spite of the more demanding academic requirements of the community college or technical school program.

School personnel on the whole agree that vocational education helps children realistically choose an occupation suitable to their abilities or aptitudes, although fewer persons felt that the programs accomplished this objective in their own schools. Counselors are far less persuaded to this view than are principals.

Only a few respondents thought that vocational education should prepare a student for immediate employment, while even fewer respondents felt that vocational education as offered in Hawaii generally or in their school provided such entry level job preparation.

Usual justifications for vocational programs. Chapter II of this study reviewed the assumptions that were usually made about the general benefits to be gained from vocational programs. The questionnaire under discussion indicates that the respondents adhere fairly closely to these common assumptions.

Most respondents (77 per cent) thought that vocational education keeps children in school who would otherwise drop out. However, fewer respondents agreed that the programs had this effect in their own schools than agreed with the statement in general. Those who are most directly in contact with drop outs and potential drop outs, the counselors, were least likely to agree to this statement.

Most respondents (85 per cent) agree also that vocational education is democratizing in that it recognizes the differing abilities and aptitudes of children. A majority (59 per cent of all, and 82 per cent of registrars) agreed at the same time that "high school vocational education programs and college preparatory programs are important parts of the national social process of separating people into semi-skilled and skilled classes and semi-professional and professional classes." This response seems to substantiate the hypothesis that vocational education functions to ease the strain between equalitarian democratic ideals and the realities of a class structured society.[11]

It seems that the unproven notion that many students are more highly motivated in vocational classes because they can see the relation of their school work to their future life is widely accepted among the respondents, despite the research evidence that high school aged youth are not thinking very much and certainly not very realistically, about future jobs or work.[12]

Two-thirds of the respondents agree that vocational education is the best way to train general intellect or the ability to think for large numbers of students on the grounds that it is based upon clear and definite visualization of concrete experiences. A majority (55 per cent) of respondents felt that the vocational programs in their schools did not have this effect. The respondents were split almost in half as to whether vocational education in Hawaii generally had the desired effect on training these students to think.

Pedagogical method. Despite the adherence to the prevocational and exploratory point of view demonstrated by the respondents, there was general consensus that the manipulative skill training pedagogy of the original vocational movement is still generally favored by school personnel.

Most respondents (80 per cent) agreed that vocational education is most successful when the student is trained in an environment as similar as possible to the work environment, and when he uses the same operations and tools as are used on the job. More than two-thirds (69 per cent) of the respondents thought that successful vocational education requires repetitive training in the skills required on the job, and almost all respondents (90 per cent) felt that vocational education instructors should have substantial trade experience.

This view of the appropriate pedagogical method[13] would seem to make more sense if the objective of the vocational programs was to provide actual occupational competency rather than preparation for post-high school work. Courses designed on the above pedagogical theory would provide a still less adequate basis for a true exploration of vocational interests. Favoring a repetitive skill training experience, which duplicates on-the-job conditions, seems inconsistent with the agreement expressed that vocational education in high school introduces students to job fields rather than giving them the skills necessary to perform a specific job. One cannot help but conclude that the contradictory responses noted above indicate lack of critical evaluation of the subject of vocational education.

Accomplishments of Vocational Education

In spite of the general endorsement given to the common assumptions made about the benefits and virtues of vocational education, its accomplishments were felt to be small.

The majority (56 per cent) of respondents felt that vocational education does not prepare children to cope adequately with the world of work which they will face in their adult years. Similarly, the majority (54 per cent) of respondents thought that vocational education in their own school does not contribute substantially to our nation's need for trained workers, although the majority (62 per cent) agreed that it ought to do so.

Agriculture. The majority of respondents (68 per cent) felt that agricultural education should develop proficiency in farming and marketing farm products, though opinion was evenly divided as to whether it did so in Hawaii generally, and the majority (53 per cent) felt that the agriculture program in their school did not accomplish the objective. The majority (60 per cent) felt agricultural education should prepare a student to manage a farm business efficiently but did not think it did so in their own school. There was general agreement that the agricultural programs not only should but do teach conservation of resources.

Home Economics. It appears from the questionnaire that the respondents view the home economics program as the most successful of the vocational education programs in accomplishing the desired objectives. Nearly all respondents agreed that home economics education prepares students for the responsibilities and activities of the home and that it improves the quality of home life, though there was somewhat less agreement that it did so in the respondent's own school than there was agreement to the general objective. Most respondents did not think that home economics prepares a student to enter occupations in the field of home economics, either locally or nationally.

Business education. Almost all respondents agreed that generally accepted objectives of business education are valid, though there was more evidence of disagreement that the statements were accurate descriptions of programs in the respondent's school than was the case with home economics.

General agreement was registered that business education provides training that will make students employable in clerical occupations, that distributive education increases the skill, technical knowledge and understanding of management and workers, and that distributive education increases the morale and judgment of management and workers.

Industrial arts. Nearly all respondents (97 per cent) agreed that industrial arts in the high school is an integral part of the vocational education program, sharing common goals with other vocational education programs. This view from the field stands in direct contradiction to the attempt of the central administration to distinguish the goals of industrial arts from the other vocational programs. It also indicates the difficulty of attempting to develop general education out of a vocational context. The respondents almost without exception also agreed that trade and industrial education increases performance skills and develops basic manipulative skills.

Overall appraisal. Only one person viewed vocational education as a dead end which made it difficult or impossible for a student who takes vocational courses in high school to change his mind and go on to college. Opinion was more evenly divided on the question of whether vocational education is the best kind of general education for children who will not go to college, although a more substantial number thought that it was than that it was not. The majority of respondents disagreed with the statement that it is better for many students who lack the ability or motivation to pursue academic programs to be assigned to vocational education programs than to be assigned to general education programs designed for their level of ability and designed to overcome a lack of motivation.

The last two responses almost directly contradict each other. The statement which offered general education specially designed to meet the needs of different children as an alternative to vocational education appeared last in the questionnaire. The acceptance of this statement as contrasted to the consistent acceptance of vocational education dogma, reflected generally by the questionnaire results, suggests perhaps that when an alternative to vocational education is offered, it may be accepted.

VOCATIONAL TRAINING IN HAWAII SECONDARY SCHOOLS

Characteristics of Vocational Teachers

In the Fall of 1964 there were 432 vocational teachers in the Hawaii schools: 68 agriculture teachers, 142 business teachers, 93 home economics teachers and 129 industrial arts teachers. (Four vocational agriculture teachers also teach some business education and industrial arts courses and in some tables in Appendix A are divided on the basis of teaching assignment.)

Trade Background

Only 61, or 14 per cent of these teachers have had any trade experience (Table 7, Appendix A). Of teachers with trade experience, 48 are industrial arts teachers, 10 are business teachers, 2 are agriculture teachers and 1 is a home economics teacher. Of the teachers with trade experience, the average length of such experience is 6 years. A disproportionately large number of the teachers with trade experience are assigned to Oahu schools.

Teaching Experience

The average length of teaching experience of vocational teachers is 10 years (Table 8, Appendix A). In agriculture it is 14 years; in business, 10 years; in home economics, 11 years; and, in industrial arts, 8 years. The most experienced teachers (including vocational agriculture teachers) are assigned to urban Honolulu and suburban and rural Oahu schools while the least experienced are more frequently found in the neighbor island schools.

Educational Background

Approximately half (50 per cent) of Hawaii's vocational teachers were educated at the University of Hawaii. Five teachers received their training at other Hawaii institutions, 43 per cent were mainland educated, and 7 per cent attended both Hawaii and mainland institutions. However, 83 per cent of the agriculture teachers were educated at the University of Hawaii, while only 25 per cent of the industrial arts teachers were so educated.

Most vocational teachers (94 per cent) have bachelor of arts or bachelor of science degrees; 80 per cent have baccalaureate majors in the field they now teach. The number of vocational teachers who majored in the field in which they teach varies by district, as follows:

Honolulu	82 per cent
Central Oahu	87 per cent
Leeward Oahu	56 per cent
Windward Oahu	70 per cent
Hawaii	85 per cent
Kauai	90 per cent
Maui	84 per cent

In addition to bachelor's degrees, 14 per cent of vocational teachers have master's degrees, almost all in the field in which they are teaching. A few individuals (4 per cent) have a degree lower than the baccalaureate (for example, normal school graduates).

Students Who Take Vocational Programs

Due in part to the official abandonment by the Department of Education of the track system, and in part to the fact that students are assigned to classes on the basis of courses available in any given school, it was difficult and beyond the resources of the Bureau to determine a precise group of students to be designated vocational students. Vocational agriculture students and distributive education students are so designated for purposes of qualifying for federal funds under the Smith-Hughes Act. Officially, each student's program, or series of courses he will take in high school is planned to fit his own particular needs and vocational objective. The actual way in which students are allocated to courses may have very little to do with the student's interests and vocational goals.

The Track System

In spite of official abandonment of a track system, the system exists in every school in the State, although the schools vary somewhat in the rigor with which they apply it.[14] To some extent the rigor of the track system depends upon the adequacy of the counseling system within the school. Generally speaking, the smaller rural schools provide more intensive counseling programs than do the urban schools. Nevertheless, less intensive counseling may mean less adherence to a track system than systematic counseling, given the attitudes towards vocational courses reported by counselors.

High schools were found to vary widely in the extent to which they advised students on course choices. At one extreme, students merely hand in course lists once a year to their homeroom teachers. The homeroom teacher may or may not review the student's suggested program for the next year before submitting it to the registrar. The registrar assigns the students to classes, attending primarily to whether the student has met any required prerequisites or does not appear to have the ability to keep up with a certain class. Counselors discuss course choices with students only when a student requests a change from a class in which he is enrolled. At the opposite extreme, students make out a four-year program of studies with the assistance of the counselor. Once or twice a year the whole program of courses is reviewed in an individual conference, and students are called from classes one at a time for this purpose.

Every high school principal, registrar and head counselor in the State was asked: "Does the school offer programs among which students can choose, that are intended to prepare the student for particular occupations or particular post-high school educational programs?" Without exception, the response to this question was in terms of the track system: students judged able to go to college are put in the college preparatory track; the rest of the students are put into a series of business, industrial arts, agriculture or home economics courses. The least able of all students are still considered terminal and are put into whatever courses are available.

Superficially, in view of the existence of vocational programs at the secondary level, it seems sensible to divide students according to their post-high school plans, and give them a program appropriate to such plans. However, there are some disadvantages in a track system organized to accommodate vocational programs, as follows:

1. Consciously, or unconsciously, a vocation or post-high school plans basis for allocating students is equated with ability as determined by academic performance and test scores. When asked how the program the student will take is determined, the almost universal response of principals, registrars and counselors was that it is determined on the basis of ability and student interest, with ability defined as grades, test scores and teacher recommendations, and interest defined as post-high school plans, i.e., whether or not the student intends to go to college. This means in effect that the school system looks at the student primarily from the point of view of deciding whether or not he can make the grade in college three to five years in advance of the decision. Satisfactory signs of ability grant him acceptance into the college preparatory group; unsatisfactory ability, in effect, places him on a vocational track. School officials emphasize that students pretty much track themselves by the time high school is reached, because by then they have developed a self-conception as academically able or inadequate.

2. The track system, based as it is on a vocational orientation, does not give careful consideration to the general education needs of children of different ability

levels. The primary thrust of the track system is vocational: the vocational goal of the college bound student is treated as college enrollment and thus the high school program considered appropriate for him is one that will enable him to meet college entrance requirements; the vocational goals of non-college bound students are divided in the categories of vocational subjects offered at high school, and thus non-college students are encouraged to take a series of business, industrial arts, agriculture or home economics courses. The schools do not claim these programs will prepare youngsters to enter occupations falling in these areas, but assume that such courses prepare the students for post-high school trade or for business school courses, or for marriage.

3. The vocational tracks are not related to post-high school vocational training. Since school administrators generally feel that an industrial arts or business program is the best preparation the high schools can offer to the future trade or business school student, one would imagine that the high school industrial arts and business courses would be articulated with the Hawaii technical schools. In fact, however, there is next to no relation between the high school and technical school programs; indeed, most of the technical school principals stated that they would prefer to have a college preparatory student. With few exceptions, all students enter the technical school program at the same level and proceed at the same rate, a situation which shows the irrelevance of the high school programs to the technical school programs.

4. The occupational categories which constitute the track system do not relate realistically to the world of work. If the high school programs were actually preparatory to trade and business school work on the post-high school level, it would seem that only those students who were quite definitely planning on going to such trade and business schools would be encouraged to take these vocational programs. Further, it would be logical to expect the high schools to plan carefully for the entrance of their industrial arts and business students into technical school. In fact, many school administrators had only a rough idea of how many of their students went to trade or business schools or how much correlation there was between the high school track of students and entrance into trade or business school. Many more youngsters are taking courses in which they are being exposed to skills in a particular trade than will ever go into that trade.

5. The result of the track system is to discourage rather than encourage identification with the educational process. School personnel around the State reported that the biggest problem in allocating students to classes is with the students and parents who resist being forced out of a college preparatory program. These youngsters, and their parents, recognize that the best opportunities for status and economic reward go to the college graduate in this society and that a failure to take courses recognized as college prerequisites cuts off access to social mobility for them or their youngster. Inability or refusal of the educational system to provide enough academic courses for average and below average students may be a failure to take advantage of the identification with education existing in these students and their families. Additionally, counselors who are vocationally oriented feel it is incumbent on them to make the youngster more aware of his limitations which are seen as a positive barrier to the kinds of occupational ambitions youngsters usually have.

6. A track system organized around vocational programs increases the probability that talented individuals from limited life environments will be lost to higher education. The earlier college/non-college decisions are made and curriculums embarked upon which have the effect of reinforcing college/non-college decisions, the greater will be the loss to society of the potential contributions of individuals whose talents were never developed. The fact is that individuals who do not take a curriculum in high school suitable for college entrance have a minimal chance of access to higher education and thus to the increasing number of occupations requiring baccalaureate degrees.

7. The track system assumes that the educational system does not have responsibility for developing students' interests in areas in which they are weak or about which they are ignorant. The present organization of curriculum seems to accept the expressed interests of fourteen and fifteen year olds as unalterables which should be accommodated by the educational system (unless the interest is in an academic course thought to be "too difficult" for the student). The alternative view would be to place the burden on the educators to develop the interest of youth in the disciplines with which educated adults are expected to be familiar.

Students Who Are Likely to Take Vocational Courses.

To identify more precisely the factors which determine whether or not a youngster would be assigned to vocational courses, all high school principals, registrars and head counselors were asked certain questions on the questionnaire. (Table 10, Appendix A contains the results of the questionnaire and reproduces the questionnaire format.) Almost all respondents felt that the overall academic record of students, teacher or counselor recommendation, and student desire to take vocational courses were significant factors in assigning students to such courses. Two out of every three respondents felt that the parent's desire to have the child take vocational courses and aptitude tests were significant factors in assignment. More than half of the respondents felt that grade records, and achievement test scores were significant factors, while 49 per cent of respondents felt that reading level was a significant factor. A majority of respondents thought that intelligence quotient, occupation of parents and income level of parents did not figure in the assignment of students to vocational courses.

The denial of "intelligence", parental occupation and income as determining factors was contradicted when more precise questions were asked as to the social background, etc. of children likely to take vocational courses. Well over half the respondents said that children of professional persons would not be likely to take vocational courses, while children of skilled, semi-skilled, unskilled, sales and clerical and service persons would be likely to take such courses. There was also substantial agreement that children from high income homes would be unlikely to be put in vocational courses, while children from middle and low income homes would be likely candidates, with low income children the most likely. It was recognized that children with high intelligence quotients would be unlikely to take vocational subjects, while average and low scorers on intelligence tests would be likely to take them. This inconsistency of response may mean that the respondents recognize the relation between income, parental occupation and children's school success, but feel that they do not intentionally consider these factors when assigning students to classes.

In regard to all other factors, the pattern of response was consistent and predictable. There was general agreement that children with good grades, good academic records, good reading ability, high scores on academic subjects, and whom teachers recommended as having high academic potential, would be unlikely to be enrolled in vocational courses. Students ranked average or below on these factors are viewed as likely to take vocational courses. The questionnaire as a whole indicates that the school personnel responsible for assigning students to classes view vocational courses as appropriate for the majority of students including the large group called average.

2

A larger percentage of respondents felt that a youngster with medium mechanical and dexterity aptitude would be likely to take vocational courses than the percentage of respondents who thought that a youngster with high mechanical and dexterity aptitude would be likely to take them. This response may indicate that the old myth that a youngster who is not academically capable is bound to be mechanically inclined is on its way out.

All but two respondents felt that student desire to take vocational courses was a determining factor; 28 persons thought, however, that a youngster with high desire to take vocational courses and high academic potential would be unlikely to take them; only 25 persons thought such a youngster would be likely to take them. Twice as many respondents thought that a youngster with high academic potential would not take such courses as thought he would even though his parents strongly desired that he do so. These responses indicate that the academic potential of the child is more apt to keep him out of such courses than either the student's or the parent's desire to have him take vocational courses is likely to put him in them.

Benefits of Vocational Programs to Students

The objectives of vocational programs have been discussed above. There is general agreement that the programs are not intended to prepare students for occupations with one exception. In the case of business training, the central staff of the Department of Education believes that the business curriculum is intended or can prepare girls for direct employment after graduation; most personnel in the schools do not share this judgment.

The view is widely held that vocational programs prepare students for post-secondary programs, although it is apparent that the curriculums are not developed with this end in view. Indeed, there is little or no articulation between the secondary vocational curriculums and the technical school curriculums, although both were developed in the same division in the Department of Education. Hawaii's decision to establish a community college system means that the secondary program must be re-evaluated in terms of its adequacy in preparing Hawaii youth for a community college including the occupational programs such a college will offer. The establishment of community colleges implies a decision that in the usual case, occupational training will commence in the post-high school period. The logical concomitant of this decision is to devote the resources of the secondary schools to providing every youngster with as strong a base as possible of general education in the natural sciences, mathematics, the social sciences and the humanities.

The idea that youngsters benefit from vocational courses because they are given a chance to explore their interests and thus make a wise vocational choice has little to commend it. It is obvious that no person can sample all occupations and choose accordingly, nor does the curriculum begin to offer a sufficient range of occupational experiences for the notion of exploration to have any real meaning. A serious program of occupational exploration would expose youngsters to a wide range of genuine occupational experiences. Again, it should be emphasized that the youngster who, for example, has taken a solid mathematics program is going to have a broader range of occupational choice than the youngster who has taken courses in auto mechanics or electricity, other things being equal.

It is held that vocational programs constitute a legitimate part of general education, but the relative merits of alternative ingredients of general education can only be weighed by reference to the range of choice or freedom the subject gives to the student. In turn, the degree of occupational freedom of choice obtained by a student depends upon the extent to which his intellectual abilities have been developed.

The silent but most potent argument in favor of vocational courses is seldom directly confronted: namely, that there are youngsters who are incapable of benefiting from the academic program. There undoubtedly is a hard core of youngsters who have lost all identification with the educational process by the time they reach high school. For these youngsters, an occupational program aimed precisely at making them employable may be sensible. On the other hand, more ambitious objectives than simple vocational placement are within the resources of society if there is willingness to evolve new curriculums designed to make cultural and intellectual activities relevant to such children. However, this hard core of youngsters unable to profit from the general academic curriculum even as it is now organized is undoubtedly far smaller than the number of youngsters who are now filling up their secondary programs with vocational courses. Furthermore, if the limited approach of vocational training and placement for the "hard to reach" high school age youth is expanded it should be viewed as a temporary measure and not as an integrated, normal part of the secondary educational system. Children currently in the school systems for whom learning no longer holds appeal could be viewed as the accidents of a social and educational system which failed somewhere along the line to make learning challenging and rewarding to them. As the educational system develops techniques and methods capable of engaging and developing the potential intellectual abilities of children of all ability levels, there can be increasingly less use of emergency occupational programs for high school age youth. It should also be emphasized that Hawaii is in a favorable position compared to the mainland in regard to the size and nature of its "drop out problem"; consequently, it would be illogical to expand programs which limit the horizons of youth in imitation of the mainland.

Resources Committed to Vocational Programs

Student time, teacher time, materials and supplies, and equipment are the resources now committed to vocational education. Perhaps the most important of these is student time, for the social cost of misusing or underutilizing the time students spend in school is high.

Vocational Course Load

In order to get some idea of how much of a student's curriculum is made up of vocational courses, each high school was asked to report how many seniors had taken vocational courses during their secondary years and how many courses they had taken. The variety of school programs in the State makes it difficult to determine precisely how much of the students' total secondary program was made up of vocational courses. Further, the schools included different grades in their returns so these data must be taken as merely indicative of the percentage of high school students' programs devoted to vocational courses. Still the data are overwhelming, especially when one considers that a student could take a maximum of 24 credits in secondary courses in grades nine to twelve, of which 11-1/2 credits are mandatory and the remainder elective.[15] The nature of the elective courses is indicative of the track the student is on and reflects the level and probably the quality of the mandatory courses he is taking.

The data show that in two-thirds of the high schools, from 50 to 93 per cent of the seniors have taken 4 or more vocational courses in high school. In two-thirds of the high schools, nearly a fourth or more of the seniors have taken 6 or more vocational courses. In 5 high schools, over 50 per cent, and in one instance 83 per cent, of the seniors have taken 6 or more vocational courses. The pattern shows a marked urban-rural differentiation, with much higher percentages of seniors taking a large number of vocational courses in rural than in urban areas as is evident from Table 1 (see also Table 11, Appendix A).

Student Hours

In order to get some measure of the overall weight of vocational courses in the curriculum, the number of students in each class which receives credit has been used as a measure of student credit hours. This approach makes it possible to compare the relative weight of the various vocational subjects within a school, within each district, and for the State. It also makes it possible to compare the weight of all vocational subjects to all subjects within a school, a district or the State.

Overall, approximately 17 per cent of secondary school student credit hours are spent in vocational courses; 1 per cent in agriculture; 6 per cent in business; 4 per cent in home economics; and 5 per cent in industrial arts (Table 12, Appendix A).

Table 1

PERCENTAGE OF SENIORS IN EACH DISTRICT
WHO HAVE TAKEN VOCATIONAL COURSES
Fall 1964

Districts	Total Seniors	0-1 Course	2-3 Courses	4 or More Courses	5 or More Courses
STATE TOTALS	9,538	21.6	31.8	46.6	32.1
Honolulu	3,705	32.7	35.0	32.3	19.0
Central Oahu	1,371	24.0	32.1	43.9	31.4
Leeward Oahu	829	12.3	23.5	64.2	45.5
Windward Oahu	1,118	13.5	29.8	56.7	39.5
Hawaii	1,200	16.3	30.3	53.4	38.5
Kauai	553	4.7	27.7	67.6	51.6
Maui	762	7.7	33.1	59.2	46.2

Source: Information furnished by individual schools in reply to a Legislative Reference Bureau request.

For high schools alone the weight of the vocational program is considerably heavier: in over half of the high schools from 20 to 26 per cent of the hours students spend in credit courses are in vocational subjects and in the remainder of the schools, with the exception of Roosevelt, from 17 to 20 per cent of student credit hours are vocational. The heaviest emphasis on vocational credit hours is at Farrington (26 per cent) and the lowest is at Roosevelt (14 per cent). In intermediate schools, student credit hours devoted to vocational subjects vary from 3 per cent to 21 per cent, although in most intermediate schools, from 10 to 13 per cent of student credit hours are in vocational subjects. As among vocational subjects, 9 per cent of all vocational student credit hours are spent in agriculture, 39 per cent in business, 21 per cent in home economics and 31 per cent in industrial arts (Table 13, Appendix A).

There is considerable variation by district in the percentage of all vocational hours spent in the various fields. The relative importance of agriculture varies from 3 per cent of all vocational student hours in Honolulu to 17 per cent in Maui. High schools with comparatively heavy emphasis on agriculture as against other vocational courses are Pahoa (34 per cent), Kau (33 per cent), Molokai (29 per cent), Lanai (25 per cent), Honokaa (25 per cent), Kahuku (24 per cent), Kohala (21 per cent), Waianae (20 per cent), and Waialua (20 per cent of vocational student hours).

The emphasis on business varies similarly, with a low percentage of vocational student hours in business in Windward Oahu (33 per cent) and a high of 46 per cent of vocational student hours in Central Oahu. High schools with exceptionally high percentages of vocational student hours devoted to business subjects are Radford (60 per cent), Leilehua (59 per cent), Kaimuki (55 per cent), Farrington (52 per cent) and Kalani (50 per cent). High schools with especially low percentages of vocational student hours devoted to business are Kau (24 per cent), Waianae (28 per cent), Hana (29 per cent), Kapaa (31 per cent), and Lahainaluna (31 per cent).

Home economics shows the same fluctuation in the relative weight given it. In Maui 17 per cent of all vocational student hours are taken in home economics; in Leeward Oahu the comparable figure is 25 per cent. Again, the variation by district, does not reveal the variation amongst high schools. This ranges from a low of 8 per cent at Leilehua and 11 per cent at Farrington to a high of 34 per cent at Hana.

Industrial arts, Central Oahu shows 27 per cent of vocational student hours devoted to the subject, while Windward Oahu shows 37 per cent. At Kailua High, 38 per cent of vocational student hours are devoted to industrial arts; at Pahoa, the figure is 10 per cent.

Variations in student hours amongst the four vocational subjects are wider for intermediate than for high schools as examination of Tables 12 and 13 in Appendix A reveals. There is no apparent rationale for such variations.

Student-Teacher Ratio

Still another approach to the relative weight of vocational courses in the curriculum is provided by examination of student-teacher ratios in vocational courses (Table 14, Appendix A). The overall ratio for all vocational courses is 28 students to each teacher. For agriculture, it is 23:1; for business, 31:1; for home economics, 29:1; for industrial arts, 26:1.

District ratios also vary widely (Table 15, Appendix A). For agriculture, the student-teacher ratio varies from 19:1 in Maui and Hawaii to 29:1 in Honolulu. Business varies from a low of 26:1 in Maui to a high of 33:1 in Honolulu. Home economics courses have the lowest overall student-teacher ratio in Maui (22:1) and the highest in Central Oahu (33:1). Industrial arts' lowest ratio is again in Maui (19:1); the highest ratio is in Leeward Oahu (28:1). For all vocational classes, the lowest ratio for districts is found in Maui (22:1) and the highest in Central Oahu and Honolulu (30:1). Individual school ratios for vocational subjects vary from lows of 7:1 at Kilohana, Maui and 12:1 at Pahoa High to a high of 35:1 at Hilo Intermediate.

Average student-teacher ratios for the State for each subject taught also show considerable variation (Table 14, Appendix A). In industrial arts, the ratio decreases in the more advanced courses. For example, in auto mechanics, it drops from 29:1 for the first year to 23:1 for the second year and 4:1 for the third year. In metals, it drops from 29:1 for the first year to 18:1 for the second year to 6:1 for the third year. Home economics shows a similar, although less extreme pattern. Average class size for homemaking I is 26 students; for homemaking III it is 20. In shorthand, the ratio drops from 29:1 in the first year to 18:1 in the second year. The average ratio for vocational agriculture I is 21:1, but for vocational agriculture III it is 14:1.

Hidden in the above average ratios are a substantial number of classes, especially in industrial arts, with less than 15 and even less than 10 students per class (Table 16, Appendix A). These pupil-teacher ratios should be compared to those in English (31 to 32:1) or algebra (about 31:1).

VOCATIONAL TRAINING IN HAWAII SECONDARY SCHOOLS

Fiscal and Personnel Resources

There is no question but that the quality of public education in Hawaii could be greatly improved if greater fiscal and human resources were available for educational purposes. However, in reality, public education in Hawaii competes for a share of the relatively limited fiscal and human resources the State is capable of providing. It may be assumed as an axiom that the needs of public education will always exceed the potential resources. This situation makes it important to allocate scarce resources to areas of greatest need or where the greatest benefit may be obtained.

Each year the secondary vocational education programs claim almost 6 per cent of the total fiscal resources allocated to public education in Hawaii. In 1964-65, $3,311,772 and 430 positions were budgeted for the secondary vocational programs. The largest programs are industrial arts and business education, each of which is nearing the million dollar mark and employ over 130 persons. Home economics is a three quarter of a million dollars program with over 90 personnel, and vocational agriculture claims over $600,000 and a staff of nearly 70 (Table 17 and Chart I, Appendix A).

Most of the operating expenditures in the vocational programs are for salaries. Of a total appropriation of $3,311,772 in 1964-65, $2,842,438 is for personnel. Other current expenses and equipment about evenly share the remainder. In addition to the operating expenses, there are sizeable capital expenditures for vocational shops and related facilities, some of which are quite specialized and costly.

The reallocation of these resources to general education could provide a base for substantial expansion; in fact, an expansion of up to 6 per cent of the total Department of Education operating budget. If the resources were reallocated on the secondary level the percentage expansion would be considerably greater.

One of the arguments frequently offered against any change in the present secondary vocational programs is the statement that receipt of federal funds may be jeopardized. Chart II, Appendix A graphically depicts the relative support of secondary vocational programs from general and federal funds. In 1964-65 federal funds totaled $99,940 whereas general funds amounted to $3,212,282. The amount of federal funds involved does not warrant the maintenace of programs of questionable value to students. In any event it appears possible that at least part of the federal funds might be obtainable under general education programs, or could be used for occupational programs at the post-high school level.

Chapter IV

TECHNICAL SCHOOLS IN HAWAII, 1964

Act 39, Session Laws of Hawaii 1964, provided for "the transfer of the public technical education programs beyond the twelfth grade level from the Department of Education to the University of Hawaii" except for those on the island of Hawaii. This transfer has been accomplished as a part of establishing a state system of community colleges. The public technical schools are in a process of change and their operations and curriculums are being reviewed.[1] As a consequence, the focus of this report is on vocational programs at the secondary level and the review of public post-secondary technical education has been deliberately limited. The observations in this chapter derive largely from interviews of technical school personnel, a bureau questionnaire administered to a random sample of technical school students in November, 1964[2], information furnished by the technical schools, and Department of Education records.

The Department of Education has legal responsibility for licensing and regulating private technical, trade and vocational schools. In the fall of 1964 there were 52 such schools with 190 professional employees and approximately 3,108 students. The schools encompass such subjects as art, automotive mechanics and electronics, charm and modeling, commercial and market training, cosmetology and hairdressing, flying, nursing and x-ray technicians, and sewing. To date the department has done little more than license these schools, but plans in the future to develop minimum standards of quality and guidelines for their operation and some system for periodic inspection and evaluation. The scope of this report was on public education and private schools were not reviewed.

Observations on the Technical School Curriculum

Curriculum planning and development in the technical schools is generally done by individual teachers for their courses. There are no published state curriculum guides for technical school courses, nor curriculum specialists for the technical schools, and administrators of technical schools are too involved with budgetary and other administrative duties to devote much time to curriculum. No regularized provision is made for meetings or other means of coordinating efforts of teachers from the various technical schools who are teaching the same subject and there appears to be only infrequent and informal interchange of ideas on any given subject or program.[3] Consequently, course content varies from school to school. No systematic consideration has been given to relating technical school curriculums to the work the student has done in secondary school. Curriculum problems and dilemmas in the technical schools center on the appropriate relations among basic general education, general education applicable to particular trade programs, theoretical work directly related to particular trades, and shop-work related to the trades being learned. These interrelations need to be clarified and the resulting policy decisions understood by the teaching staff at the schools in order to: (1) improve and bring order to post-secondary technical education; and (2) provide students a continuous, integrated education from kindergarten through technical training. Closely connected with curriculum problems are quantitatively and qualitatively inadequate guidance and occupational placement services offered the students.

Lack of Relation of Secondary and Technical School Program

Perhaps the most glaring defect in the present organization of the technical schools is that the technical school programs have been developed without consideration of the students' secondary curriculums; thus, the course work that a student enrolled in a given program will take does not depend upon what courses he took in high school. The sole exception cited by the Department of Education is at Kapiolani Technical School where proficiency in typing, shorthand and transcription is tested and those who exhibit sufficient skill are placed in advanced classes.' The student who has taken industrial arts courses in high school gains no advantage over the student who has never taken such a course, while the student who has taken the highest level of mathematics, English, social studies, science or related subjects in high school must take the same related academic courses as the student who has been vocationally tracked in high school and has taken a lower level of such courses.

The lack in the secondary schools of substantive sequential occupational curriculums and the failure to provide adequate general education leads to the observation that the secondary school program has not been devised to prepare individuals for technical school. Inadequate secondary general education leaves the technical schools faced with students requiring what amounts to remedial work in the basic communicative and computational skills--mathematics, science and English--while trying to carry on a program of occupational preparation. Improving the quality of the secondary general education curriculums would allow the post-secondary occupational training programs to (a) train students in occupational skills in a shorter time, or (b) add a broader range of related or general education courses at a more stimulating and rewarding level than are presently offered.[4]

Guidance and Placement

At present, little provision is made for guidance of any sort at the technical schools. Only one of the schools has a counselor, and he must carry the major burden of both formal placement as well as program and personal guidance functions. At the other technical schools, the principal and individual teachers must perform all guidance and placement functions. Little attempt appears to be made to guide students into programs appropriate to their ability or interest beyond the rather mechanical sorting of students into three ability level groupings largely on the basis of test scores and high school performance. The ability level group in which the individual is placed determines the range of programs for which he is eligible to apply.

The technical schools seem to rely fairly heavily on previous contacts made by the teaching staff or the principal with employers for placing their students. It was not feasible to determine how many employers in the community have regularized contact with the schools. Ideally, placement records would be kept in such a way that the effectiveness of present programs could be evaluated in the light of the rapidity of advancement and promotion of technical school students and the level of employment within a job field that the average graduate attains; further, measures would be devised for comparing the relative occupational success of graduates in the various trades with that of persons who take only part of the technical school program or who undertake no formal post-secondary occupational training. Existing records maintained at the central office do not provide an adequate basis for evaluating present programs, since they show only the percentage of students placed in the field for which they studied, or in a related field; the actual position of the individual is not shown.[5] The technical schools do not at present have the staff to do follow-up studies of their graduates over a period of time, or to do studies with control groups which would provide a superior basis for evaluation.[6]

Related Academic Subjects

Most of the technical school programs are of two-year duration, during which period a student is required to take a series of English, science, mathematics and industrial economics courses, along with his shop work. The students, however, are scheduled in these related courses on the basis of the program they are in rather than according to their general ability level. Thus all auto mechanic students take the same English course irrespective of their ability in English or their prior training. There is considerable difference of opinion as to whether the "related" academic science subjects are to be general in nature, or whether they are to be applied courses, appropriate to each trade group.

The questionnaire completed by technical school students was in part a device to gain a sense of student feeling toward related academic work. When asked how technical school programs could be improved, a number of students complained that the related academic work was dull and high-schoolish. Many students expressed an explicit desire for a more varied academic program.

The students were asked whether the technical school program had improved their ability to read, write and speak English. Sixty-five per cent felt it had, 15 per cent felt it had not and 19 per cent didn't know. Only 29 per cent felt that the schools had given them a better understanding of government and politics while 53 per cent felt it had not, and 17 per cent didn't know.

Fifty-five per cent of students thought their technical school training had helped them understand the production and selling of goods in the United States; 26 per cent felt that it hadn't. Sixty-three per cent felt that the school work had helped them understand the consequences of automation, while 22 per cent felt that it had not helped them.

In addition to the two-year programs which require completion of a related academic program, there are a number of programs at the technical schools which have no such requirements, or few related academic subject requirements. A few respondents to the questionnaire who fall in this latter category of programs indicated a desire to have related academic subjects.

Related Trade Work

The concept of providing students with a broad background in a general occupational field so that they are not limited to one narrow and specific occupational function has gained general acceptance amongst occupational educators. It is commonly said that the average worker will have to change his occupation several times over the course of his occupational life.

In this connection, 26 per cent of the students thought they spent too little time on related subjects and 12 per cent felt too much time was so spent (Appendix D). When asked which related subjects they would like to spend more time on, 33 per cent indicated related trade subjects, 31 per cent indicated mathematics, 20 per cent indicated English, 8 per cent indicated science, and 8 per cent indicated industrial economics. Students were also asked if they felt their training would equip them to enter other fields than the one they were training for. Forty-eight per cent thought it would, 19 per cent thought it would not and 33 per cent didn't know. When asked what other fields they thought they would be equipped to enter, 52 per cent listed the name of another program offered at the technical school.

The students were also asked if they expected to remain in the field for which they were being trained until they retired; 53 per cent answered that they didn't know, 31 per cent answered yes, and 16 per cent answered no. Students were more convinced that their training would give them a chance for promotion and job advancement in their field. Eighty per cent thought it would, 17 per cent didn't know, and only 4 per cent thought it would not. When asked if they expected difficulty in getting a job when they had completed their program, 48 per cent answered that they didn't know, 31 per cent answered no, and 21 per cent expected difficulty.

Taken together, the questionnaire results suggest that students are not too clear on permanent occupational goals, have an unclear conception of what they can expect in the labor market, and what kinds of jobs their training may have prepared them for. This suggests the need for an effective counseling and guidance program[7] which is in extremely close contact with employers.

Fiscal and Personnel Resources Allocated to Post-Secondary Vocational and Technical Training

Post-secondary vocational and technical training is a relatively small program in terms of total expenditures. The adjusted appropriation for 1964-65 totals $1,234,086 and 136 positions (Table 18, Appendix A). Technical day school instruction claims most of this amount: $888,392 and 105 positions. Plant operation and maintenance accounts for slightly more than $100,000 and administration and supervision slightly less. Evening school instruction receives only $73,256, apprenticeship training $41,820, and trade and industrial training $21,179 (Chart 3, Appendix A). Total program expenditures amount to barely more than 2 per cent of the total Department of Education budget.

Table 18, Appendix A, shows the breakdown of expenditures from 1960-61 to 1964-65. The most noticeable trend is the relative constant level of resources devoted to these programs. Only the technical day school instruction program shows any marked increases and that only in the last year. It is possible that with the community college system additional resources will be available for post-secondary vocational and technical training.

The limited expenditure on these programs has probably contributed to the expansion of secondary vocational education programs. Limited opportunities are available at the post-secondary level and therefore pressure exists for alternative opportunities including secondary level programs.

If the secondary programs are to be limited to general education, the need for expansion of post-secondary vocational training may increase.

As was true with the secondary vocational education programs the relative share of federal funds in the post-secondary programs is very small (Chart 4, Appendix A). In 1964-65 the State will expend $1,138,849 in contrast to federal contributions of $95,327. The part played by federal funds in shaping programs and initiating new activities at the technical schools appears to be out of proportion to the amount of contribution by the federal government. The State as the overwhelming supporter of these programs should design technical school curriculums suited to the needs of local students. If a federal supported program is included among these curriculums, then federal funds should be accepted but curriculums should not be designed just to become eligible for federal support.

The Technical School Students

The questionnaire administered to current technical school students indicated that there is a small group, most of whom are in the trades, who seem disinclined towards related or academic work of any kind. These students indicate that their interest is in gaining a trade. On the other hand, there is a somewhat larger group that manifested considerable interest in an expanded and more varied academic program (such as envisioned in a community college). Response to a number of questionnaire items suggested that most students at the technical schools could not be called hostile to academic course work or school per se.

For example, 83 per cent of respondents did not think too much time was spent on related subjects. Seventy-one per cent said they would take art, history, music, psychology, government, science, math, foreign language, business administration and speech courses if the technical school offered them.[8] Thirty-four per cent said they would like at some future time to take courses that have nothing to do with earning a living but which might be enjoyable or of interest to them. Of courses students would eventually like to take, 43 per cent were of a hobby or practical nature, 43 per cent were in the humanities or social sciences, 13 per cent were trade or vocational courses and 3 per cent were in science and mathematics.[9]

Receptiveness towards courses was further indicated by student desire to take additional advanced course work in their trade. Some 84 per cent indicated they would do so. As to the place they would like to take such training, 26 per cent would prefer an adult evening school, 23 per cent a community college, 21 per cent on-the-job, 15 per cent at a college or university, and 15 per cent at a technical school.

Similarly, 74 per cent of students said they would like, or expected, to take courses in other trades closely related to their present trade. Of these, 26 per cent preferred adult evening school for such work, 25 per cent selected technical school, 22 per cent a community college, 15 per cent on-the-job training, and 12 per cent a university.

Along similar lines, the questionnaire indicated a sizeable group whose decision to go to technical school was based, at least in part, on their inability to go to college suggesting that these individuals consider technical school an inferior substitute to college. The students were asked why they chose to go to technical school rather than to the University of Hawaii or another college. Slightly less than half the students (47 per cent) indicated that technical school was a negative choice for them. Some 21 per cent answered that they couldn't get admitted to the University, 13 per cent said they couldn't afford college, 11 per cent were pessimistic about their chances of success at college, and 2 per cent said their parents didn't want them to go to college. Slightly more than half checked an answer indicating a positive sentiment toward technical school or away from college. Some 10 per cent said they didn't think about it, 13 per cent said they never wanted to go to college, 6 per cent said they didn't like bookwork, 16 per cent thought they would earn more with a trade than as a University graduate and 6 per cent simply wanted the trade.

The interest in what technical students believe to be college work and the general identification of higher status with a college education suggest that many present technical school students will be receptive and responsive to a community college program. On the other hand, those individuals who have become unreceptive to an academic program should be given the opportunity to enroll in an occupational program suited to their ability level and of the shortest duration necessary to make them employable. In short, there is conspicuous need for greater flexibility of programming at the technical school level.

Student Criticism

The students were asked how the technical schools could be improved. Almost a third (31 per cent) thought programs are good now and do not need improvement. The other two-thirds offered written comments as follows: 28 per cent of the responses described inadequate equipment, space, and staff; 21 per cent of responses favored more shop work; 19 per cent favored a more varied academic program; 7 per cent complained about poor teaching; and 5 per cent favored the addition of extracurricular activities. Scattered comments criticized the inadequacy of both library and text books, the inadequacy of job placement help, and inadequacy of programs as realistic occupational preparation.

Achievement and Ability Measures of Technical School Students

Persons of similar ability to those now in the technical schools must not be excluded from community colleges if these colleges are to keep their promise of being "open-door" and "second chance" institutions.[10] Therefore, it is fairly essential to have a clear view of the ability, achievement and motivational characteristics (see Footnote 9) of the present student population. The technical schools do not presently keep data capable of yielding a very useful or refined picture of the ability and achievement characteristics of their present student population; however, the information that is available shows that while there is a minority of quite capable students now in the technical schools, as measured by test scores obtained on the School College Aptitude Test, the great bulk of the students enrolled fall below the 50th percentile on this test. Data obtained thus far indicate that the average ability and achievement for the group vary from program to program and that there is also a wide range of ability level represented in each program. This appears to point to a lack of sufficient curriculum flexibility and choice to enable students to work at or near their own ability and achievement level. Teachers in the technical schools often registered the complaint that they are attempting to deal with too great a range of ability and achievement levels at one time, a fact which many of them believe decreases the efficacy of the educational process.

Taking a larger view of the present student body, it is apparent that it is a group largely deficient in the fundamentals of education, yet one which exhibits considerable identification with the educational process and apparent willingness to learn. It is the existence of latent curiosity and interest in liberal education which makes the deficiencies in the fundamentals so tragic and perhaps so unnecessary.

Apprenticeship

A study of vocational and technical education in the State would be incomplete without some review of state recognized apprenticeship programs. Apprenticeship programs are created through voluntary agreements between apprentices and employers which conform with standards for apprenticeship agreements established by the Director of Labor and Industrial Relations pursuant to statutory provisions relating to apprenticeship.[11] The purpose of such programs is to ensure an adequate supply of journeymen for various skilled crafts and trades. (See Table 19, Appendix A for a listing of present apprenticeship programs and data on new registrations, resumptions, cancellations, and completions.) In order to gain journeyman status under a state approved apprenticeship program, the apprentice must complete not less than four thousand hours of reasonably continuous employment and not less than one hundred forty-four hours per year of related instruction, although this latter requirement may be reduced by the Department of Labor and Industrial Relations. Essentially, the role of the state government in the apprenticeship field is to promote apprenticeship agreements, to establish standards for such agreements, to maintain records relating to such agreements, and to provide related instruction for apprentices.

The entire field of apprenticeship is due for searching and critical study beyond the scope of this report as became apparent in the course of briefly observing and appraising the present apprenticeship program and in particular, the educational services performed by the State for apprentices. (These educational services are primarily the responsibility of Honolulu Evening Technical School, a night school program which uses the facilities of Honolulu Technical School.) It should be pointed out that some apprenticeship programs add a third unrelated layer of education or training to similar secondary vocational and technical school day programs. For example, a student in a large high school may take one or two years of auto shop, then proceed after graduation to an auto mechanics or auto shop program in the technical day school and upon finishing the technical school program and gaining employment become indentured as an apprentice in the automotive and diesel trades. This possibility exists for most apprenticeship programs. Just as there is little or no relation between the secondary and technical curriculums, the apprenticeship training is usually unrelated to the individual's prior education at the secondary or technical school levels.

Apprenticeship training is viewed by many as the best method for developing skilled craftsmen because it combines on-the-job experience with theoretical work in the classroom. In fact, it is extremely difficult to evaluate apprenticeship, in part, because of the involvement of organized labor, employers and educators, whose interests are sometimes antagonistic. This situation is partly attributable to the complexities and economics of technological change. It is to the union's interest to maintain a supply of journeymen small enough to protect or increase journeyman's wages, yet large enough to be competitive for jobs with alternative products or processes made possible by technological change. In fact, however, only a few unions have been able to limit access to journeyman status to those who have completed apprenticeship programs. It also is in the union's interest to have apprenticeship programs that are qualitatively good enough to produce well-rounded and flexible craftsmen, partly to prevent the obsolescence of a well defined craft through substitution of technological techniques which can utilize semi-skilled or unskilled workers and partly so that craftsmen can adjust to those technological changes which alter the nature of the job to be performed.

At present, there is little evidence of curriculum organization at Honolulu Evening Technical School;[12] indeed, the condition or related instruction at the school might in some instances be called chaotic and irrational. Many factors contribute to the situation, not the least of which is the impact of technological change which makes it difficult to determine just what a well-rounded and flexible craftsman in any given trade is. Does flexibility require theoretical understanding of science and mathematics so that, for example, the electrician can cope with electronics? Or should related instruction concentrate on assuring that the apprentice learns all the skills of his trade, for example, that the painter have a course in color mixing, despite the increased use of pre-mixed paint. And what of the fact that many individuals are accepted by employers for apprenticeship who are so lacking in basic general education, that the related work becomes a remedial program?

Despite apparent confusion as to what related instruction should be, those who attain journeyman status through formal apprenticeship must complete a certain number of clock hours of related instruction. He may have to repeat the same course because there is nothing else available, or he may take a series of courses which are totally unrelated to what he has taken before or to the on-the-job work he is doing. The depression that must inevitably accompany a compulsory "educational" program requiring attendance at night classes after a full day's work which must often seem irrelevant is apparent at Honolulu Evening Technical School.

To add to the confusion, there is no rational relationship between the day school trade program and apprenticeship. It would seem that if successful completion of the day school program provides necessary preparation for apprenticeship, a definite policy requiring or at least encouraging such preapprenticeship preparation should be established. If the day school program is not necessary to developing a well-rounded craftsman, or if it needs alteration in order to be a logical step for all apprentices, then a consistent policy should be developed to accord with the real educational and on-the-job training needs of the craftsman. The existing situation demands careful examination and rethinking of how best to combine institutional training and on-the-job training in each craft area in the context of rapid technological change. Some questions for consideration are:

1. What level of general education, especially in mathematics, science and language is required for each craft or trade group?

2. What is the optimum relation between on-the-job training and institutional training for each occupational group?

3. What policies can the State adopt to encourage employers to provide on-the-job training, and should employers be required to release apprentices during the day for related study?

Any conclusions reached should be followed consistently throughout State supported programs.

Chapter V

ALTERNATIVES

Most observers of the American educational scene agree that our educational systems now face serious problems which will require strenuous efforts at experimentation and whole-hearted attempts at innovation. Some contend, as does this report, that a fundamental reexamination of the aims of education against the background of democratic ideals will help ensure a fruitful direction for experimentation and innovation. Vocational education stands very much at the heart of any reexamination of secondary education and its aims, because it has long been associated with the peculiar educational requirements of persons who do not continue on to higher education, or who fail there, and because attention is now being turned to the education of this majority of American youth.[1] There is considerable disagreement on what form this attention should take and on what the aims should be of an educational system which serves all equally. This chapter explores some of the alternatives that have been advanced. These alternatives are presented as models in order to focus sharply on the areas of genuine disagreement as to educational principle and assumptions. In reality, the alternatives represent more of a continuum of possibilities than mutually exclusive choices. However, it is hoped that by bringing into the open the underlying assumptions of each model, or proposed alternative, concerned individuals may be able to make a more definite choice as to the future of the Hawaii educational system. It is also hoped that by focusing as sharply as possible on the issues involved, the list of items, principles or objectives on which all can agree may be expanded.

Alternatives for Consideration

Briefly, the major alternative directions in which the Hawaii educational system can move are: (1) maintenance of existing programs and addition of more occupational training oriented programs; (2) reduction of existing emphasis on "practical-arts" and increasing emphasis on occupational training programs; (3) maintenance of emphasis on "practical-arts" as opposed to occupational training programs at the secondary level, but use of such programs primarily as a means of holding children in school in order to provide them with more general education; (4) transformation of vocational education into curriculum aimed at intellectual development; and (5) conversion of the system to one which offers a general education curriculum for all students at the secondary level, supplemented by post-high school occupational training programs and intensive job placement efforts.

(1) Maintenance of existing program and addition of more occupational training oriented programs. This report has analyzed the manner in which existing vocational programs may be reinforcing or contributing to the maintenance of social class inequalities. Additionally, the "practical-arts" emphasis of secondary programs does not provide the vocationally tracked youth with genuine occupational training. At best, such a youth may develop some manipulative skills which may aid him in getting an entry level job. The educational system may be able to ensure that the benefit of the development of some manipulative skills is not lost in other ways than through continuing the existing structure of vocational programs. It is difficult to see how the deleterious consequences for democratic ideals of the existing dualistic structure can be overcome without making some fairly fundamental changes in that structure.

The heavy emphasis on the vocational areas in Hawaii's schools reduces the adequacy of student preparation for college or for post-high school vocational work. If new occupational training programs were simply added on to the existing structure, some youth with potential ability for preparation for jobs demanding the attainment of higher educational levels might be directed at an early age through such occupational training programs to jobs requiring less educational attainment. Thus, neither from the point of view of utilizing the educational system to attain democratic ideals, nor from the point of view of maximizing the number of persons capable of holding the growing number of more sophisticated occupational positions, does the maintenance of the status quo with the addition of new secondary level occupational programs seem to commend itself.

(2) Reduction of existing emphasis on "practical-arts" and increasing emphasis on occupational training programs. On the basis of the findings and analysis contained in this report it would be difficult to recommend a greater emphasis on occupational training programs at the secondary level, even if such programs were to be substituted for existing "practical-arts" courses rather than being added on to the present structure. Addition of such programs would not solve the status problem nor would it provide a long-range solution to the problem of greater development of the intellectual potentialities of all students. However, there is substantial merit to this alternative as a temporary emergency measure aimed to serve those who are alienated from the school system and those whose intellectual potential the school system does not yet know how to tap. Such programs should be limited to those who are genuinely disaffected with school work and who are not able to overcome their difficulties within the regular school curriculum. Occupational training programs for such youth could be accompanied by intensified emphasis on the basic language and mathematical skills.

For such youth, on-the-job training would seem most desirable. But jobs that provided little opportunity for development and learning should be avoided insofar as possible in such occupational training programs. A suggestion made by a conference on education and cultural deprivation deserves attention:

> Work on blind-alley positions which involve little opportunity for learning would have little value for the student. It is quite possible that work-study programs could be developed in which the type of work experiences are arranged in an increasing order of complexity from jobs that could be learned in a single week to jobs that require many weeks to master. If then, students could begin with simple jobs, learn them and then move to more complex jobs, they could develop some of the basic abilities of learning to work and learning to adapt to different work situations. Ideally, a student might have four to six work experiences during the age period 16 to 19. A student in these work experiences should be appropriately supervised and helped to learn both on the job and in the school. The student should be moved to as complex a type of work as he can master and increasingly his work experiences should be related to the types of jobs for which there will be greatest need in industry and the community.[2]

(3) Maintenance of emphasis on "practical-arts" as opposed to occupational training programs at the secondary level, but use of programs primarily as a means of holding children in school to provide them with more general education. One of the problems with the occupational training approach to the educational problems of the non-college bound or the slow learner is that the necessary cooperation of employers might not be forthcoming. Furthermore, such programs might not supply such youth with the basic general education necessary to rapidly learn new vocational skills in the face of rapid technological change. These considerations led to a recommendation in the Portland school district to substitute "occupation-oriented" programs for the traditional vocational and technical programs, including the "practical-arts". The report states:

> The new programs would begin in the concrete, the practical order, and proceed to develop in the student the basic learning tools which a productive citizen needs to function in our society.
>
> We use the words "occupation-oriented programs of general education" in order to distinguish our suggested program from traditional vocational or technical programs. The difference lies in the objective and the emphasis which is placed. In the traditional vocational program the objective is to train the student in a particular skill; in the proposed occupation-oriented program of general education

> the emphasis is placed on providing the student with a general education. Although the general nature of "shop" courses might be the same in both programs, in the occupation-oriented general education program shopwork would be the point of departure for developing in the student an ability to read, write, calculate, reason, discuss. These would be the skills primarily intended; the specific skills of the shop would be considered by-products.[3]

This recommendation does not appear to go beyond an attempt to capitalize on any student interest in the practical-arts courses as a means of holding children in school long enough to give them a more adequate general education. Thus it does not really come to grips with the status problem inherent in the existing dualistic secondary educational structure. There are a few educational assumptions contained in this approach which perhaps could be subject to empirical verification through carefully planned and controlled experimentation. First is the assumption that children who do not respond to existing educational techniques or who become alienated from existing educational systems have a physical approach to learning and that they are more apt to grasp general principles if the direction of learning is from the concrete to the abstract. Second is the assumption that there are no methods, techniques or substantive materials that are as inherently interesting to this group of students as are those now found in the typically equipped shop. Third is the assumption that it is practically possible to use shopwork as "the point of departure for developing in the student an ability to read, write, calculate, reason, discuss." These assumptions may turn out to be reasonable approximations of the truth, but the educational system might make faster headway if serious attempts were made to verify them as soon as possible and before further educational structures are built upon them. For example, if the vocational program is to be justified primarily on the basis of its holding power, it should be possible to compare its appeal to that of, say, a biology or physics course with rich laboratory materials for experiment.

(4) Transformation of vocational education into curriculum aimed at intellectual development. A proposal for a total transformation of what is now known as vocational education grew out of "The Summer Study on Occupational, Vocational and Technical Education" sponsored by the Massachusetts Institute of Technology in 1965.[4] Summer Study suggests that new curriculums be devised for all students using "nonverbal capabilities and talents as a base for the acquisition of skills, of understanding and of competence in the academic disciplines". It is suggested that:

> . . .there is need to expand and generalize current vocational education in such a way that working with materials, with systems and with processes provides a foundation on which can be built meaningful intellectual competence. All of education, whatever its long-range goal, has

> need of an approach to learning that utilizes project-type, goal-oriented processes, requiring personal investigative involvement of students. The understanding generated by these experiences can be extended and differentiated into patterns that comprise the traditional academic disciplines.[5]

The report foresees the development of entirely new patterns of learning to start at the junior high school level and to be based on "the shop-laboratory" or similar working situations. All students would participate in these new programs. The report contends that those who flourish in present academic work would stand to gain from an approach which emphasized exploration of the evidence on which knowledge is based. And those who are disinclined towards abstract and verbal approaches to learning would have opportunity for development of intellectual power and competence "that alone can insure against the recurring need for retraining."[6] Furthermore, the investigative approach would provide "for the acquisition of manipulative and other skills as concurrent benefits of a total learning process the goal of which is to encourage students along academic paths as far as innate intelligence and ability allow."[7]

The objective of the Massachusetts Institute of Technology conception appears to be to provide one educational ladder for all in order to overcome the status problem and the problem of limited attention to intellectual development built into the existing educational structure. It appears to have been inspired by the methodology employed in the mathematics and science curriculum reform movements. The report states that "identification with any single discipline will be discouraged, if not impossible" in the investigative activities. Whether it is possible to transfer an approach which seeks to have the child discover for himself the principles of a discipline to a vaguely conceived "multidisciplinary" area remains to be tested. The report does not make clear the advantages of development of these "new patterns of learning" over attempting to extend the use of induction, discovery, and investigation as a method for teaching the disciplines to an ever-growing proportion of students, but rather builds its case on past failures of the kind of "general-education" which has been typically offered in American secondary schools.

The report asserts that the "new patterns of learning" will provide an "alternative route to higher education from those now existing."[8] However, examination of the specific proposals advanced in the report might make one dubious that programs developed on the guidelines or conceptions therein contained would in fact provide any route to higher education, or for that matter, any route to the scholarly disciplines. For example, an "investigative learning project" contained in the report is for the design of "creative lighting for student's home recreation room." This project consists of identifying equipment needed through use of such materials as manufacturers' catalogues, writing a proposal, drawing plans, writing to relevant community authorities for licenses and plans, making a scale model, writing articles geared to "various reading levels" such as Better Homes and Gardens and technical journals and making an oral report to class.[9]

This is said to constitute an "interdisciplinary experience" presumably on the grounds that one is called upon to do research, i. e., look at a catalogue, to write business letters, to make a talk, to use some arithmetic, and so forth. However, the use of skills or even concepts used in a discipline is by no means the same thing as learning the discipline. The term "interdisciplinary" ordinarily refers to a fusion of, or combination of the insights, concepts, principles or viewpoints of scholarly disciplines. The basic issue is whether the educational system is going to attempt to introduce all comers to the scholarly disciplines, using concrete materials, laboratory experiences or empirical research as necessary to get across concepts and principles, or whether the educational system is going to organize programs by borrowing from the disciplines as convenient and requiring the use of English, arithmetic or scientific concepts in the carrying out of various practical projects. While "the manipulation and investigation of artifacts for the purpose of discovering concepts in science"[10] may prove a fruitful educational approach, it is difficult to see how the specific proposals contained in the Summer Study report qualify as embodying such an a approach.

(5) Conversion of system to one which offers a general education curriculum for all students at the secondary level, supplemented by post-high school occupational training programs and intensive job placement efforts. (a) General education. This alternative would require a committment of the educational system to a substantively different direction and goal for change than is involved in any of the alternatives suggested heretofore. It is not possible to lay out on paper, in a neat package, the specifics of curriculum change that would constitute general or liberal education for all at the secondary level. Nor is it realistic to expect that such a change could be made overnight or even within a period of a few years. Much that would be contained in such education must be developed over time through innovation and experimentation. And a committment to general education for all at the secondary level involves a committment to diversity and to continuing innovation and experimentation as to both the substance and methods of such education. However, it is possible to specify broad goals and general guidelines that constitute at least initial criteria for differentiating between general education and the other alternatives set out heretofore.

Perhaps most basic to the development of effective general education at the secondary level for all is a belief in the immense potentialities of man. Some consensus has now been reached that the preschool child is considerably more capable of cognitive development than had been assumed, as the following conclusions from a report on a Social Science Research Council conference indicate:

> . . .it is increasingly clear that the preschool child is an enormously pliable organism capable of very broad achievements under suitable educational conditions. Ideas of what the limits of these achievements might be have changed considerably as a result of research reported at the conference and elsewhere. . . .The general conclusion that environment, rearing, and educational procedures can advance or retard at least some types of cognitive functioning is inescapable.[11]

Changed and more optimistic views of the preschool child's cognitive potentialities has led to great efforts to change and improve the educational experiences of preschool and primary school children. A more optimistic view of the cognitive capacities of the adolescent might well lead to change and improvement of his educational experiences. A view of man such as that expressed by Harry Stack Sullivan, a great American psychiatrist, may be the *sine qua non* of secondary level general education:

> "It is good doctrine that man is essentially benevolent, not malevolent; that, given opportunity, he moves towards mutual understanding and helpfulness, not towards defrauding and exploiting the less fortunate. . . . In any case, it has been given to some psychiatrists to discover by systematic observation how greatly their patients are impelled towards mental health, once some fatal blockage of personal development has been removed. It is clear that man is a stupendously capable creature. Even the not-too-human imbecile is capable of most of the performances done by the average peacetime citizen, were he but fortunately--and very patiently--trained. Most of the more superior equipment of the average man gets little or no use from adolescence onward and it is doubtful if even Leonardo da Vinci came anywhere near finding his full metier."[12]

Arthur P. Coladarci of Stanford University reminded the participants at the Governor's Conference on Educational Issues in a Changing World at Kaanapali, Maui, in 1965 of the applicability of the concept of the self-fulfilling prophecy in education. The way in which a situation is defined, whether or not it is truly or falsely defined, can evoke behavior which makes the original conception come true. Thus, "when *all* of the available pupil information is brought together for the uncritical teacher in that 'contract with destiny,' the cumulative record, such an uncritical teacher may build self-fulfilling hypotheses so strong as to defy either identification or destruction", such as that "John is a C student".[13] Coladarci quoted Goethe, so appropriate in this context:

> if you treat an individual as he is,
> he will stay as he is, but if you treat him
> as he were what he ought to be and could be,
> he will become what he ought to be and could be.[14]

In addition to basic expectations about the potentialities of adolescent human beings, a successful general education curriculum for all would require that all secondary programs be appraised on the basis of how much they contribute to the development of the kinds of characteristics or abilities suggested by the following quotation:

> . . .the ability to reason critically and to reach sound, i.e. testable judgments on one's own; knowledge enough to be able to start thinking in various areas of experience and types of situations and to know what should be known as grounds for judgment; curiosity and imagination, to project one's thought into the unfamiliar, to discover the new; sensitivity and sensibility, the sort of feeling that supports the imagination in understanding people and situations and in aesthetic appreciation; social attitudes and criteria of decision and of behavior based on a considered non-egoistic value structure.[15]

These words emphasize both the development of capacities for autonomous judgment, action and feeling, and the dependence of the development of such qualities on knowledge rather than mere opinion, personal prejudices or culturally acquired and unexamined habits and values. Perhaps what most differentiates the advocate of general education or liberal education for all from advocates of other educational goals or programs is the conviction that the chances that such qualities will emerge in the individual can be enormously enhanced by formal educational systems if such systems conscientiously and systematically introduce the individual to the best creations of the human mind and spirit in all the fields of human endeavor. The object is to put the individual in as close contact as possible with the best so that he may appropriate the best to himself for his own purposes.

How are these "best" creations of man to be chosen? The logical place to look would seem to be to those creations, concepts, principles, works or products in any area of human endeavor which are esteemed most highly by serious students in those areas. Thus it has been proposed that all curriculum materials be drawn from the scholarly disciplines,[16] and that for curriculum reform to be effective, eminent scholars in the discipline under consideration and the universities in general must be active participants in curriculum design and testing.[17]

ALTERNATIVES

It is at precisely this point that schemes for educational change such as that suggested by the MIT sponsored Summer Study report discussed above differ from a committment to general or liberal education for all. The Summer Study report recognizes the inadequacy of present vocational programs to meet the work preparation requirements of rapid technological change. It recognizes the need to concentrate effort on intellectual development rather than manipulative skills. It recognizes the need for a unified educational ladder to overcome the dualistic division of mind and body characteristic of the existing educational structure.

These are important areas of agreement, but basic differences remain. The Summer Study report does not propose that the new curriculums be based on the scholarly disciplines (although it is intended that the work would lead to the disciplines for some). The report suggests the borrowing of concepts or skills from the disciplines where applicable to practical projects, the primary goal of which appears to be development of vocational or occupational competence. In contrast, general education as defined in this report, would integrate vocational subject matter, materials, or skills where relevant and effective in demonstrating or concretizing scientific and humanistic principles and concepts.

Advocates of general education would assume that knowledge of the occupational system, the economic system, and the impact of technology on society are most effectively attained through study of the scholarly disciplines. In contrast, the Summer Study report suggests that such knowledge can be attained by introducing specific "vocational learning" in the form of items or topics at given grade levels. For example, the properties and uses of various materials are to be introduced at grades seven, eight, and nine, and "information about a number of specific vocations selected to match the vocational needs and aspirations of the students" at grade ten.[18] The rationale for basing curriculum on the scholarly disciplines rather than items, topics, or projects is well expressed by Jerome Bruner:

> Teaching specific topics or skills without making clear their context in the broader fundamental structure of a field of knowledge is uneconomical in several deep senses. In the first place, such teaching makes it exceedingly difficult for the student to generalize from what he has learned to what he will encounter later. In the second place, learning that has fallen short of a grasp of general principles has little reward in terms of intellectual excitement. The best way to create interest in a subject is to render it worth knowing, which means to make the knowledge gained useable in one's thinking beyond the situation in which the learning has occurred. Third, knowledge one has acquired without sufficient structure to tie it together is knowledge that

> is likely to be forgotten. An unconnected set of facts has a pitiably short half-life in memory. Organizing facts in terms of principles and ideas from which they may be inferred is the only known way of reducing the quick rate of loss of human memory.[19]

It should be emphasized that changes in the direction of general education through secondary school for all should not and need not mean the loss of the valuable contributions of vocational education to American education such as the "direct kinesthetic experiences through the handling and forming of materials,"[20] or the development of manipulative skills, or any of the incentives and contributions to learning that can be derived from "doing". Much greater use of materials, tools, and laboratories can be made throughout the school system, especially in the elementary schools; much greater richness and variety, and wider availability of these handmaidens to learning would no doubt be welcomed by all. Combining the making of artifacts or music with disciplined study of art and aesthetics might release immense quantities of productive energy in the young.

(b) Occupational Training. At the present time there is no truly coherent policy for publicly supported occupational training. The high school vocational programs, the technical school vocational programs, the apprenticeship programs and the manpower training and retraining programs have inconsistent or overlapping goals and procedures which in some ways are in direct conflict. This report has indicated that part of the difficulty can be attributed to an unrealistic or inadequate conception or appraisal of the abilities which are in fact valued by employers for various jobs, and the extent to which such abilities can and should be developed in formal, publicly supported occupational training programs. The incoherence of present programs springs also from the inherent conflict between the craftsmanship concept with its promise of dignified, meaningful individual work and the technological reality. The fact is that the craftsman and his product can and are being displaced both by division of work into segments performed by non-craftsmen and by the factory-produced product.

Governmental policies on manpower training can influence the rate of obsolescence of craftsmen or otherwise modify and affect the pace of technological change. For example, manpower training programs can (and in some instances have) been used to undercut apprenticeship programs by making partially trained workers available for jobs that might otherwise go to apprentices, thus encouraging adoption of technology that does not require utilizing skilled craftsmen, or by providing routes to journeyman status other than through apprenticeship. Again, vocational education programs, if uncoordinated with union controlled apprenticeship programs, can affect union control over the jobs for which skilled craftsmen might be used. The coherence of occupational training programs depends not only on knowledge about training needs, but also upon public policies regarding the organization of work and the desirability of various forms of market regulation through structuring of training.

The development of a coherent policy defining the nature and extent of public responsibility for occupational training requires more attention to: (1) administrative problems, i.e., what should be the role of different public agencies in providing such training; (2) clientele questions, i.e., should occupational training programs be designed to train populations with different needs, different age groupings and different ability levels; (3) pedagogical problems, i.e., when and to what extent institutional programs rather than on-the-job training are required; and (4) questions as to the boundary between public and private responsibility for training.

Past experience with occupational training suggests the desirability of preventing: (1) establishment of occupational programs unrelated to job opportunities; (2) development of vested interests in certain occupational programs that are unresponsive to changing needs; (3) the attempt to meet general education needs through occupational programs, that is, substitution of vocational for general education; and (4) public expenditures for training which could be done better on-the-job.

Chapter VI

THE CHANGING CURRICULUM

Education, nationally and in Hawaii, has been increasingly subjected to review and change in the last two decades. What is fashionably referred to as the curriculum reform movement[1] has wrought some fundamental, if piecemeal, changes in what is taught in the schools and how it is taught. The current attention in Hawaii to vocational and technical education is part of a nationally evident concern with the total curriculum. Curriculum reform and vocational and technical education are discussed briefly in the first section of this chapter. The second section of the chapter reviews some recent actions of the Hawaii Board and Department of Education on curriculum and vocational education. Implications for the future are explored in the last part of the chapter.

Curriculum Reform and Vocational and Technical Education

> We begin with the hypothesis that any subject can be taught effectively in some intellectually honest form to any child at any stage of development. It is a bold hypothesis and an essential one in thinking about the nature of a curriculum. No evidence exists to contradict it; considerable evidence is being amassed that supports it.[2]

In the more than six years that have elapsed since this statement was written, more evidence in its support is being accumulated. To some extent, it has become a basic tenet of the philosophy pervading the present efforts at curriculum reform. The fact that a child (except one who is terribly deficient) can learn any subject if taught effectively has tremendous implications for curriculum.

It raises anew broad questions about what ought to be the content of the curriculum offered from preschool through secondary levels. The present curriculum seems structured to serve two major groups of students--the college bound and the non-college bound. For the college bound, the curriculum concentrates on teaching these students some of the basic intellectual concepts of disciplines. For the non-college bound, the curriculum is orientated towards job or skill training.

All of us expect students to learn basic communication and computation skills and the general norms of acceptable behavior in the society. Yet even in these fundamental areas, students are frequently sorted out early in their school careers on the basis of some measure of ability. Once sorted out the less able or slower students are usually not taught the same concepts as the more able and faster students. This becomes painfully apparent at the secondary level where students are invariably tracked in one form or another and each track offers a different kind and quality of education.

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If children can be taught any subject in some intellectually honest form it becomes imperative to define the knowledge and skills every child should possess when he completes his elementary and secondary schooling. The curriculum can then be structured to make maximum use of the different techniques required to provide each child with this basic core of knowledge and skills. In effect, this requires spelling out some definite objectives for the education system. This will have subsidiary benefits--for clearly specified goals enable the development of standards to measure effectiveness and progress. Obviously, the basic core will have to be modified over time to reflect changes in the society.

A common objective of the major curriculum reform projects is to identify the fundamental concepts of a discipline and structure a learning program which results in students gaining possession of those concepts. Concepts considered fundamental are those which enable an individual to think and reason within the framework of the discipline, to understand relationships with which the discipline is concerned, and to apply disciplinary knowledge to solve problems. Slowly but surely there is a growing understanding of the factors that constitute an effective learning process for children of varying abilities, motivation, and involvement.

One aspect of the attention being devoted to curriculum is the attempt to define those claims on the curriculum which should be recognized. Clearly, no educational system can provide a curriculum that is all things to all men. Generally, priority is recommended for the traditional disciplines constituting the natural and physical sciences, the social sciences, and the humanities.[3] King and Brownell devote chapter 3 of their book entitled The Curriculum and the Disciplines of Knowledge: A Theory of Curriculum Practice, to an instructive discussion of the common and general elements identifying disciplines. Some such basis must support any comprehensive approach to evaluating claims on the curriculum. King and Brownell also recognize the educability of all children in their statement "The fulfillment of each person's capacity for meanings through encounters with the significant realms of experience is the most humane of educational ideas."[4] These factors suggest that curriculum review and revision should involve, among others, individuals who are knowledgeable in the disciplines which are to contribute to the content of the curriculum.

Curriculum Change in Hawaii

The Hawaii Board of Education on May 19, 1966, adopted a general direction on curriculum revision, "An Outline of Direction" (see Appendix E). A related memo was issued by the Assistant Superintendent for Curriculum, Instruction, and Guidance on May 24, 1966

(Appendix F), and on July 21, 1966, the Board adopted a statement on vocational education (Appendix G). The Outline of Direction begins with the statement "The Department of Education is committed to curriculum revision".

The Outline of Direction devotes a section to vocational education. It encourages a policy defining the department's responsibility as offering educational activities for children and youth from preschool to grade twelve. This policy "would lay the basis for redefinition of what is now labled vocational education". It further suggests that if the intellectual development of children means an education that concentrates on broad concepts in fields of knowledge "then training in the progressively involuted specific skills and knowledge" included in vocational education courses may be taking up time that could better be used in other ways. It is implied that vocational education might be understood as the "practical application of the sciences including math", or as representative technologies affecting human behavior. The guideline for saving parts of the present vocational education curriculum would be the extent to which the curriculum requirements in this field "actually reinforce, extend, demonstrate, the more abstruse learnings that are proffered in the more general education courses". The determination of the relevance or usefulness of present vocational education curriculum to a particular academic discipline must, of course, involve the judgment of those knowledgeable in that particular academic discipline.

Vocational education is further discussed in the May 24, 1966, memorandum. This is a brief attempt to pursue the earlier thoughts of the Outline of Direction. It offers for discussion some assumptions which try to define the relationship of vocational education to academic disciplines. Again, the line of descent is traced from academic disciplines to technologies that apply learnings from these disciplines to problems of basic human needs to justify the study of technologies if (1) vocational education courses not only relate to academic subjects but contribute to these subjects, (2) language arts skills are employed along with "doing" in teaching understandings, (3) shops and fields are used as laboratory and demonstration centers, and (4) there is acceptance that the "world of gainful work" is a concern but specific occupational training is not.

The Board's statement of July 21, 1966, on vocational education begins by reaffirming its earlier position "that the goal of Hawaii's public schools is the maximum intellectual development of all children". The best basis for occupational training and employment success is "a strong background in the intellectual curriculum in which the fields of language, mathematics and other academic disciplines are emphasized". To this end the Board mandates "that the curriculum in general education be so developed that each child and youth will be motivated to achieve the full development of his intellectual potential".

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The Board makes it absolutely clear that "The issue is not the survival of vocational education". Rather the questions are:

1. At what point in the educational and training career of children should occupational training be offered?
2. What agencies or institutions should be responsible for the public role in occupational training?
3. What should be the concerns of public education offered by the Department of Education?
4. What should be done with present vocational education courses?

In answer to the first question, the Board felt "vocational preparation programs are best located in those years immediately preceding entry to the occupational world" and are most successfully achieved "in the post-high school years".

The public responsibility for occupational training programs should be assumed by the University of Hawaii primarily through its community college system.

The Department of Education should concentrate its efforts on programs at the preschool, elementary, and secondary levels designed. to develop fully the intellectual potential of every child.

The fourth question was not answered, but forms the basis for further study:

> It is our [the Board's] desire that the programs of "industrial arts," "business and distributive education," and "homemaking," among others [presumably including vocational agriculture], be studied intensively in Hawaii during the next twelve months. We are interested in finding out whether or not these programs have intellectual or academic aspects which can be emphasized. We also request the Superintendent and his staff to consider whether or not the intellectual aspects might best be served by their absorption into programs in the sciences, social sciences and the arts.

The Board's statement may lead to at least two major difficulties. In the first place, the stated objectives of the department are so general and abstract that they may lead to much misunderstanding and may not accomplish what the Board actually desires. At least one authority proposes that a statement of objectives for an education program must denote some measurable attributes observable in the graduate of the program, or otherwise it is impossible to determine whether or not the program is meeting the objectives.[5] On the other hand, it is apparent that some of the desired attributes may not be measurable or at least they will be very difficult and expensive to measure. There might thus be a real danger that if only easily measured attributes are included, the curriculum may be warped in favor of those easily quantifiable attributes.

Secondly, the statements seem to assume that necessary curriculum review and revision can be accomplished with the resources currently available to the department. However, a review of other curriculum reform projects indicates that each reform project requires tremendous outlays of money and the mustering of impressive arrays of a broad range of human talents.[6] Intensive curriculum review by the Department of Education similarly would seem to require funds and personnel beyond those presently available.

The implications for action in the Board's positions might be viewed as forming a continuum. At one end of the continuum would be efforts in the status quo by self-study and superficial change such as the redesignation of vocational education programs as courses in "practical arts". Toward the other end of the continuum would be efforts to review the total curriculum from preschool through secondary levels in relation to clearly defined objectives for the education of youth combined with the research and experimentation necessary to develop a curriculum which would best achieve the objectives. The Board must attempt to clearly and specifically determine at which point in the continuum effort should be concentrated.

Challenges for Future Action

Public education in Hawaii faces a number of large and important challenges in the field of curriculum. Decisions to try to meet these challenges may lead to an impressively high quality of public education; conversely, failure to rise to the occasion may well limit educational opportunity for Hawaii's youth.

The major challenges might be summarized as follows:

1. The thesis that all children can be effectively taught any subject in some intellectually honest form is perhaps the most impressive challenge. Stated most directly the implication is that public education can offer every student a curriculum designed to develop the uniquely human qualities of intelligence, aesthetic sensibility, humaneness, and brotherhood.

This may well reduce the emphasis in present curriculum from occupational preparation whether that preparation takes the form of readying the student for post-secondary occupational training in a college or other institution, or readying him for immediate entry into the labor market. It would end an educational system engaged in sorting students out for different kinds and qualities of educational programs. In its place would be a system oriented to developing the intellectual, aesthetic, humane and brotherhood potentials of students to the fullest possible extent. The goal would be a world where men, no matter what their occupational status, could participate in and enjoy the more rewarding aspects of human existence. This thesis does not mean that all men would participate in the same way or to the same degree or that the level of enjoyment would be uniform.

2. The need to define the objectives of public education in Hawaii.

These objectives must be stated in terms that enable some measuring of educational programs for effectiveness and progress. Further, a set of specific objectives is required in order to set priorities and make decisions on the purposes for which educational resources should be used.

3. The need to design a curriculum based on academic disciplines which is most likely to facilitate the fullest development of students' human potential.

The present vocational education program should be reviewed for relevance to academic disciplines. Those aspects of vocational education that can be justified as useful means of teaching fundamental disciplinary concepts should be incorporated into the part of the curriculum dealing with the appropriate discipline.

4. The need to review and reform the total public education curriculum in Hawaii from preschool through secondary levels.

The magnitude of this challenge is staggering and, yet, it ultimately must be accomplished if quality public education is to come closer to reality. Present curriculum reform projects across the nation represent only a piecemeal approach. Hawaii should draw on this work but the prime task of overall review and revision will remain. The job is so big that concerted effort needs to be devoted to developing a plan for accomplishing it.

The Hawaii Curriculum Center, a joint venture of the Department of Education and the University of Hawaii, is being presently utilized by the Board of Education for a review of the language-arts curriculum. It may be a logical agency to prepare a comprehensive plan for total curriculum review and revision. The plan should define the work to be done, the order in which it should be accomplished, and the estimated cost of the project. Furthermore, those responsible for preparing the plan could be charged with exploring means of financing the project including the availability of state, federal, and foundation funding. The plan would provide a long-range basis for the systematic and rational upgrading of the curriculum including that part of it devoted to vocational education programs.

Miss Evelyn Goya prepared the manuscript for printing.

FOOTNOTES

Chapter I

1. Arthur Bestor, The Restoration of Learning (New York: Alfred A. Knopf, 1955), p. 88.

2. Cited in Bestor, p. 85.

3. See James B. Conant, The American High School Today (New York: McGraw-Hill, 1959) and Slums and Suburbs (New York: McGraw-Hill, 1961). Conant emphasizes intellectual development for entrance into the professions and proposes that only those who test in the top 15 per cent nationally in ability should receive vigorous intellectual education in high school. Yet for this top group, Conant argues for preparation in science, mathematics, social science and foreign language, regardless of future professional plans on the solid ground that such preparation will enable a broader choice of profession later.

4. See Benjamin S. Bloom, Allison Davis, and Robert Hess, Compensatory Education for Cultural Deprivation, based on Working Papers Contributed by Participants in the Research Conference on Education and Cultural Deprivation (New York: Holt, Rinehart and Winston, 1965). This conference of social scientists working in the area of education and cultural deprivation formulated a series of generalizations based on "what is known from a body of theory and principles, what is known from relevant empirical research, and what is known from observations and action programs in the school". The generalizations are supplemented by an annotated bibliography on educational and cultural deprivation which provides an excellent review of the extensive research done in the area in recent years. On the question of learning capacity, the report states: "Until recently, differences in children's I.Q. were attributed largely to native endowment; very little of the variation was attributed to the effects of environment. The more recent research has demonstrated that for children growing up under adverse circumstances the I.Q. may be depressed by a significant amount and that intervention at certain points (and especially in the period from ages three to nine) can raise the I.Q. by as much as ten to fifteen points. . . . Furthermore, the measurement of the culturally deprived child's intelligence at one point does not determine the upper limits of what he might be able to learn in the schools if more favorable conditions are subsequently provided in the home and/or in the school." (p.12)

   On the effects of the school on intellectual development:

   "Present school practices do not succeed in overcoming the initial differences between culturally advantaged and culturally disadvantaged children. Instead, what start as small measurable differences in the first grade become larger each year. By the end of the sixth year of school, there is a cumulative deficit in the school achievement of the culturally disadvantaged children which shows up most clearly in the tool subjects of reading and arithmetic. But, even in the measures of general intelligence many of these children appear to decline during the period of grade 1 to grade 6." (p. 20)

   On the feasibility of overcoming the difficulties of educational failure with lower class or otherwise deprived children:

   "There is increasing evidence that elementary school programs have been developed which reduce the cumulative deficits in learning. Some of these school programs appear to have such powerful effects in the improvement of reading, language (including speech), and arithmetic that the differences between culturally disadvantaged and culturally advantaged children become very small." (p. 23)

   On the consequences for the educability of the child of teacher attitude:

   "Research on attitudes of teachers toward disadvantaged children generally shows more negative evaluations of these children than of middle-class children. Since difficulties are often encountered in teaching deprived children, many teachers attempt to transfer from 'difficult' schools and often blame parents and children for classroom difficulties. The attribution of blame and lack of rewards received by these children in school, in addition to the many other handicaps these children have, further interferes with successful learning and teaching. In experimental programs which provided teachers with curricula more suited to these children, successful teaching developed more positive attitudes regarding the children and resulted in less teacher turnover." (p. 75)

5. Cited in Bestor, p. 91.

6. A complete explanation of the term "technician" and the occupations falling into this category can be found in Lynn A. Emerson, Technical Training in the United States, Appendix I of Education for a Changing World of Work; Report of the Panel of Consultants on Vocational Education Requested by the President of the United States (Washington: U.S. Government Printing Office, 1963).

7. Bestor, p. 51.

8. For expositions of the concept of general education used see, in addition to Bestor, Philip H. Phenix, Realms of Meaning: A Philosophy of the Curriculum for General Education (New York: McGraw-Hill, 1964), and Jerome S. Bruner, The Process of Education (New York: Random House, 1960) and Martin Mayer, Where, When, and Why: Social Studies in American Schools (New York: Harper & Row, 1962).

Chapter II

1. The first vocational education act was the Smith-Hughes Act, 39 Stat. 929 (1917), which provided a grant of $7.2 million annually in perpetuity to the states for promotion of vocational education in agriculture, trade and industrial education, and home economics, including $3 million to agriculture, $3 million to trade and industrial and home economics education, of which not more than 20 per cent could be used for home economics, $1 million

for teacher training, and $200,000 for the Federal Board for Vocational Education. The George-Reed Act, 45 Stat. 1151 (1929), authorized an appropriation of $500,000 for the year ending June 30, 1930, and an additional $500,000 each year thereafter until June 30, 1964, to be divided equally between agriculture and home economics. The George-Ellzey Act, 48 Stat. 792 (1934), authorized an appropriation of $3 million each year for 3 years, to be divided equally among agriculture, home economics and trade and industrial education. The George-Ellzey Act was replaced by the George-Deen Act, 49 Stat. 1488 (1936), which had no expiration date and which authorized an appropriation of $12 million to be divided equally among the three subjects; an additional $1.2 million was authorized for vocational programs in the distributive occupations, and $1 million was authorized for teacher training. The George-Deen Act was amended in 1946 by the George-Barden Act, 60 Stat. 775 (1946), which authorized an appropriation of $28,850,000 annually, of which $10 million was allotted for agriculture, $8 million for home economics, $8 million for industrial education, and $2.5 million for distributive education. Specific authorization of funds for practical nursing was made by the Health Amendments Act of 1956, 70 Stat. 923 (1956), and for vocational education in the fishery trades and industries by Public Law No. 1027, 84th Cong., 2d. Sess. (Aug. 8, 1956).

2. See U. S., Office of Education, Education for a Changing World of Work; Report of the Panel of Consultants on Vocational Education, prepared at the request of the President of the United States (Washington: U. S. Government Printing Office, 1964).

3. The Vocational Education Act of 1963, 77 Stat. 403 (1963), which authorized the appropriation of $60 million for fiscal 1965, $118.5 million for fiscal 1966, and $225 million for fiscal 1967 and every year thereafter for vocational education; Title VIII of the National Defense Education Act, 72 Stat. 1580 (1958), provides funds for training of highly skilled technicians; the Area Redevelopment Act, 75 Stat. 47 (1961), provides funds for training of the unemployed and underemployed in economically distressed areas; the Manpower Development and Training Act, 76 Stat. 23 (1962), provides funds for training and skill development of the unemployed; the Economic Opportunity Act of 1964, 78 Stat. 508 (1964).

4. Prominent among the advocates of federal support for vocational education was Charles A. Prosser who headed the National Society for the Promotion of Industrial Education and whose concepts of vocational education pedagogy seem to have permeated the development of vocational programs in the country. In this regard, see Grant Venn, Man, Education and Work (Washington: American Council on Education, 1964), pp. 54-59. Prosser was a member of President Wilson's Commission on National Aid to Vocational Education, and his thinking dominates the report of that Commission. (Compare Vocational Education: Report of the Commission on National Aid to Vocational Education (Washington: U. S. Government Printing Office, 1914) with Prosser's book Vocational Education in a Democracy (New York: Century Co., 1925).

5. See Vocational Education: Report of the Commission, and see Prosser, p. 60, who argues that vocational education promotes social morale by conserving individual morale, that the person who is unstable in his personal life becomes "unstable in his reactions to society. Hense the I.W.W. and other radical organizations of that type." Prosser goes on to assert that vocational education promotes morale by "turning parasites into workers."

6. The original vocational education movement made many promises regarding the efficacy of vocational programs for dealing with unemployment, with lack of consumer purchasing power, and with "social unrest". In the words of the 1914 Commission Report:

   "It is sufficiently obvious that the waste of labor by imperfect or by improper employment can be largely avoided by vocational training in the elements of useful crafts. Such training is, moreover, the most certain remedy for unemployment. . . .

   "Vocational training is needed to increase wage-earning power. -- The practical training of workmen in any pursuit brings both immediate and lasting economic returns in increased production and wage-earning capacity. . . .

   "Vocational training is needed to offset the increased cost of living. -- With a farming area practically stationary, a rapidly increasing population, and an agricultural class whose ability with present methods to meet the demands for larger production is relatively diminishing, our national appetite has outgrown both our national larder and our national pocketbook. Population tends to press upon subsistence. The cost of the necessaries of life has risen faster than the earning power of the consumer and has operated to reduce the actual income of the wageworker and make the struggle for existence very hard, not only to the common laborer but even to the trade worker of small means. For millions of our people life has as a result been narrowed and sombered.

   "Industrial and social unrest is due in large measure to a lack of vocational training. -- The absence of opportunity for creative work and, hence, for full self-expression is, without doubt, one of the causes of much of the present unrest. The tendency of large scale production to subdivide labor almost indefinitely and to confine a worker to one monotonous process, requiring little save purely manipulative skill, while effective so far as the material product is concerned, is serious when measured in terms of human values. It is safe to say that industry in its highly organized form, with its intense specialization, is in the main narrowing to the individual worker, and while 'hands' alone may satisfy the immediate demands of industry, the failure to recognize and provide for human progress and development is producing a restless and discontented people."

7. Strong evidence that the effect of vocational education on social and economic problems was not as anticipated is provided by a report on labor's experience with vocational

education made in 1937 for the President's Advisory Committee on Education. See John Dale Russell and Associates, Vocational Education; Staff Study No. 81, prepared for the Advisory Committee on Education (Washington: U. S. Government Printing Office, 1938). The report noted labor dissatisfaction on grounds that it produced "a legion of graduates unrelated in numbers to any competent standard of employment needs;" that "the skill of manual trades could only be learned through doing;" and thus "the first requirement of the trainee for skilled occupations is to have reasonably permanent employment in that occupation;" that "all vocational development should begin from that point;" (p. 260) that trade school products are a drag on the market; (p.269) that vocational education "fails to prepare [persons] for industrial life with a good working knowledge of economics, all aspects of the employment situation, modern labor relationships, collective bargaining, and other sociological factors which affect their welfare;" (p. 266) and that many vocational teachers were in league with employers and taught an anti-union point of view. (pp. 266-267) Especially noteworthy in this report is the recommendation that: "The remedy for this situation lies in a gradual elimination of pre-employment training by trade schools, in broadening the general educational base for mechanics, and in minimizing mechanical education during the high school years and emphasizing general education." (p. 269)

8. Cited in Donald W. Michael, "Cybernation: The Silent Conquest," Automation: Implications for the Future, ed. Morris Philipson (New York: Random House, 1962), p. 100.

9. See Frank Riessman, The Culturally Deprived Child (New York: Harper & Row, 1962).

10. Lawrence H. Fuchs, Hawaii Pono (New York: Harcourt, Brace & World, 1961) and Benjamin O. Wist, A Century of Public Education in Hawaii (Honolulu: Hawaii Educational Review, 1940).

11. See Fuchs, pp. 279-280.

12. Hawaii, Governor's Advisory Committee on Education, Survey of Schools and Industry (Honolulu: Printshop, 1931); see also Fuchs, pp. 292-295 and Wist, pp. 162-170.

13. Wist, p. 189.

14. Fuchs, p. 295.

15. Paul H. Douglas, American Apprenticeship and Industrial Education (New York, 1921).

16. See Max Weber, The Theory of Social and Economic Organization, trans. A. M. Henderson and Talcott Parsons (Glencoe, Ill.: Free Press, 1947), pp. 223-224.

17. Georges Friedmann, The Anatomy of Work: Labor, Leisure and the Implications of Automation, trans. Wyatt Rawson (Glencoe, Ill.: Free Press, 1961), pp. 6-7.

18. See Weber, Friedmann, and see Alain Touraine, "An Historical Theory in the Evolution of Industrial Skills," in Charles R. Walker and A. G. Walker, Modern Technology and Civilization (New York: McGraw-Hill, 1962), pp. 425-437. Also see Hannah Arendt, The Human Condition (New York: Doubleday, 1958), p. 78.

19. Touraine, p. 429.

20. Seymour L. Wolfbein, "Automation and Skill," The Annals of the American Academy of Political and Social Science, 346 (March 1962), 59.

21. Vocational Education: Report of the Commision.

22. U. S., Office of Education, Education for a
22. Changing World of Work, p. XVII and p. 86.

23. Touraine, p. 432.

24. See U. S., Department of Labor, Manpower Report of the President and a Report on Manpower Requirements, Resources, Utilization, and Training (Washington: U. S. Government Printing Office, 1964), p. 70, which discusses a training survey indicating that "most of the workers had 'just picked up' the necessary skills for the job or developed them through informal instruction and experience." For tables showing how persons learned their current jobs, see Manpower Report, pp. 257-259.

25. "Whether from necessity or not, the economic fact is that the mass of children go to work as soon as the laws of the various States permit. It is not solely because the children and their parents do not appreciate the value of an education that more than half of the entire number who enter the elementary school do not remain to complete it. It is, at least to some extent, because neither they nor their parents are able to see in the schools of today an opportunity for education and training to fit them for callings which they must pursue. . . .

"Vocational training is needed for its indirect but positive effect on the aims and methods of general education by developing a better teaching process through which children who do not respond to book instruction alone may be reached and educated through learning by doing. . . .

"There are many over age children in the grades, many who fail to be promoted from year to year and soon lose interest and drop out of school. Many of these retarded children are present in the few elementary vocational schools already established in this country, and many teachers in these schools have testified to the remarkable progress made by these children under a kind of instruction which is suited to their interests and abilities, which utilizes the experience of the child and relates the instruction to his motor activities. This is the most successful way of teaching the normal child or man."

Excerpts from Vocational Education: Report of the Commission, passim.

26. President Kennedy's panel of consultants report, "There is little objective evidence, however, to show that vocational education does promote retention of students in school" (U. S., Office of Education, Education for a Changing World of Work, p. 209). Yet on p. 221, the same

report states: "Vocational education contributes to the total educational effort by: (a) keeping many younger people in school for a longer period of time, (b) making education more meaningful in that vocational training illustrates the importance of many aspects of the curriculum."

27. See, for example, M. P. Carter, Home, School and Work (New York: Macmillan Co., 1962), pp. 106-129.

28. "Conditions for training in thinking best in vocational education. Effective thinking must be based upon clear and definite visualization of the facts to be used as thinking material. This 'mental seeing' of things is most clear and effective when it is based upon first-hand and concrete experience. Both of these conditions are found to the maximum degree in vocational instruction as contrasted with all other forms of education." (Prosser, p. 54) Also see Russell and Associates, p. 12, which notes that "the idea of the narrow and specific type of vocational education followed in the wake of the psychological theory which denied all transfer [of learning] and insisted that the training to be effective, must be intimately related to the life situation. For example, under this theory, the boy who is to operate a lathe in a steel plant must be trained in the school on the identical kind of machine, using the same materials he will later deal with in the shop."

29. Prosser, p. 50.

30. "Vocational training is needed to democratize the education of the country by recognizing different tastes and abilities and by giving an equal opportunity to all to prepare for their life work. . .by introducing into our educational system the aim of utility to take its place in dignity by the side of culture, and to connect education with life by making it purposeful and useful." Vocational Education: Report of the Commission, pp. 23 and 25.

    At the present time there is a tendency to deplore the emphasis of the American high school on preparation for college, and to point out that this emphasis is harmful to the children who don't have the ability to complete a four-year college course successfully. However, it doesn't automatically follow that the failure to provide adequately for children of differing abilities means that vocational programs should be expanded. Another approach would be to use devices and techniques capable of capturing curiosity and instilling motivation to learn in individuals whose environment has prevented them from developing such motivation and interest.

31. Race and Equal Educational Opportunity in Portland's Public Schools, A Report to the Board of Education, Multnomah School District No. 1 by its Committee on Race and Education (Portland, Ore.: 1964), p. 142.

32. Wilbur B. Brookover and Sigmund Nosow, A Sociological Analysis of Vocational Education in the United States, Appendix III of Education for a Changing World of Work; Report of the Panel of Consultants on Vocational Education Requested by the President of the United States (Washington: U. S. Government Printing Office, 1963), p. 31. See entire article for a fully developed treatment of the problem.

33. See Norbert J. Nelson, Frank J. Woerdehoff and John K. Coster, Vocational Education in Public Schools as Related to Social, Economic and Technical Trends, Part II (Lafayette, Ind.: Purdue University, 1960), pp. 27-31.

34. The Division of Vocational, Post-High and Adult Education prepared a statement for the Legislative Reference Bureau on the purposes of vocational programs in Hawaii. The purpose of industrial arts was stated as follows: "Its objective continues to be a program of broad exploratory experiences for all students. . .in the use of tools, materials and equipment. . .which [provide] them with some basic knowledge of occupations and with the skills for avocational pursuits." The purpose of home economics is "to provide girls with basic experiences and understandings of the kinds of activities necessary in properly running a home." Similarly, "agricultural education is again considered a general education subject in the intermediate grades wherein students are provided exploratory experiences in the agricultural fields of agricultural arts and horticulture." Also see the Department of Education's curriculum guides which are replete with references to the general education values of vocational subjects.

35. In interviews held throughout the State with high school personnel, this view was frequently expressed to Legislative Reference Bureau staff.

36. See Lawrence A. Cremin, The Transformation of the School: Progressivism in American Education, 1876-1957 (New York: Alfred A. Knopf, 1961) for a history of the relationship between progressive education and vocational education.

37. John Dewey, The School and Society (Chicago: University of Chicago Press, 1900), pp. 34-36.

38. John Dewey, Democracy and Education: An Introduction to the Philosophy of Education (New York: Macmillan Co., 1932), pp. 373-374.

39. Ibid.

40. U. S., Office of Education, Education for a Changing World of Work, p. 227.

41. Ibid.

42. Ibid., p. 86.

43. Ibid., p. XVII.

44. Ibid., p. 220.

45. Ibid., p. 153.

46. Ibid., p. 213.

47. Technological change is the broader term for productivity increases due to mechanization (substitution of machinery for labor power) and increased organizational efficiency (from both "scientific" analysis of job processes and from mergers and consolidations of productive units, and other managerial efficiencies). Automation

and cybernation refer to particular kinds of technological change which are considered by many to have dramatic potential for radical changes of man's relation to work. Automation is generally used to refer to the replacement of humans by machines for sensing and motor tasks, while cybernation refers to the use of computers for complex logical and decision-making tasks.

48. For an excellent example of the range of views held by students of the subject, see Morris Philipson (ed.), Automation: Implications for the Future (New York: Random House, 1962). Automation is singled out for special treatment in attempts to project future trends in the occupational profile (number of workers in the various occupational categories) resulting from technological change. It is clear that technological change has produced a general shift in the occupational profile of the country during this century, characterized by increases in white-collar occupations and decreases in blue-collar groups, and increases in service workers and decreases in farm workers. But this shift has gone on gradually enough so that adjustment of the educational and skill level of the population has kept pace with labor market changes. However, during the post-war period, employment in manufacturing has shown a relative decline, as has the occupational category of operatives and kindred workers. (See U. S., Department of Labor, Manpower Report of the President and a Report on Manpower Requirements, Resources, Utilization and Training (Washington: U. S. Government Printing Office, 1963). Application of computer technology may also result in a serious decline of employment opportunity for female clerical workers (see John T. Dunlop (ed.), Automation and Technological Change (New Jersey: Prentice Hall, 1962), p. 130) and middle management (see Melvin Anshen, "Managerial Decisions", in Dunlop). One of the major problems in forecasting the future occupational profile is to determine whether the introduction of automation will result in such a dramatic proportional decline in demand for semi-skilled and unskilled labor that adjustment of the educational and skill level of the population will not be able to keep pace with the requirements of the labor market. (See Donald N. Michael, "Cybernation: The Silent Conquest," and Peter F. Drucker, "The Promise of Automation," both in Philipson.) At present, there is a high demand for skilled scientists, engineers and technicians necessary to install and maintain automated processes, and it seems generally expected that such persons will constitute an increasing fraction of the work force. (See Henry A. Simon, "The Corporation: Will it be Managed by Machines?" in Philipson, p. 246.)

49. Argument has raged for some time as to whether present unemployment rates are attributable to inadequate demand and consequent failure to utilize and expand the nation's industrial plant, or whether it is attributable to changing educational requirements for workers and in particular an alleged bottleneck inhibiting the rate of technological change caused by inadequate supplies of scientific, engineering and technical personnel. The disproportionate rise in long-term unemployment since 1957, and the coincidence of such unemployment with youth, older workers and minority groups characterized by low educational attainments provides the best support to the structuralist argument that automation is creating unemployment. See U. S., Department of Labor, Manpower Report of the President, 1963 and 1964.

50. "Much of the debate concerning the skill upgrading or downgrading effects of automation. . .have been of little relevance since the number of jobs in the automated process is reduced anyway. The relevant question is the skill and educational requirements for the new jobs created by output expansion." U. S., Congress, Senate, Subcommittee on Employment and Manpower of the Committee on Labor and Public Welfare, Toward Full Employment: Proposals for a Comprehensive Employment and Manpower Policy in the United States, 88th Cong., 2nd Sess., 1964, p. 19.

51. For a report on case studies of varying effects of the introduction of automated equipment, see Floyd C. Mann, "Psychological and Organizational Impacts," in Dunlop, pp. 43-65.

52. For changes in the nation's occupational profile, see U. S., Department of Labor, Manpower Report of the President, 1963, pp. 25-32.

53. The problem is most dramatically underscored by the experience of programs under the Manpower Development and Training Act, which indicated the need for literacy training before occupational training could be successful. In 1963, the Act was amended to provide funds for a maximum of 20 weeks of basic literacy training.

The relationship of education to employment is heavily stressed in all the literature. Unemployment is more closely linked with level of educational attainment than with formal job training. See U. S., Department of Labor, Manpower Report of the President, 1964, p. 68.

54. See U. S., Department of Labor, Trends in Output per Man-Hour in the Private Economy, 1909-1958, Bull. No. 1249 and annual extensions.

55. To simplify, there seem to be two major views as to demands automation will ultimately make on the educational system. One view holds that automation need not result in unemployment, but will require rapid qualitative educational upgrading of large segments of the population, since the labor market demand will be not for the man with "high gadgeteering skill" but rather persons with "ability to think, a trained imagination and good judgment, plus some skill in logical methods, some mathematical understanding and some ability above the elementary level to read and write - in a word, the normal equipment of educated people" (Drucker, p. 224). The other strain of thought emphasizes the need to educate for leisure in the Greek sense of constructive, purposive activity, on the grounds that automation will free most men from the necessity of labor. Actually, both views indicate need for as great an effort at general education as society at any given time can afford.

56. U. S., Congress, Senate, Subcommittee on Employment and Manpower of the Committee on Labor and Public Welfare, Toward Full Employment, p. 78.

57. See, for example, Emile Durkheim, The Division of Labour in Society, trans. George Simpson (Glencoe, Ill.: Free Press, 1947); Karl Marx, Das Kapital; George C. Homans, The Human Group (New York: Harcourt, Brace, 1950); Daniel Bell, "Notes on Work," Encounter (June 1954); Erich Fromm, The Sane Society (New York: Rinehart, 1955); Charles R. Walker and Robert Guest, The Man on the Assembly Line (Cambridge, Mass.: Harvard University Press, 1952).

Chapter III

1. In 1963 the Ford Foundation initiated a program to help improve vocational and technical education in the United States. A number of grants have been made under this program to date. Several of them (American Institute for Research, Pittsburgh; Oklahoma State University; and the University of Wisconsin) are concerned primarily with gathering hard data on the operation and consequences of present vocational and technical education.

2. See Aaron V. Cicourel and John I. Kitsuse, The Educational Decision-Makers (New York: Bobbs-Merril, 1963), for a study which "conceives of the differentiation of students as a consequence of the administrative organization and decisions of personnel in the high school" and which contends "that the distribution of students in such categories as college-qualified and non-college-qualified is to a large extent characteristic of the administrative organization of the high school and therefore can be explained in terms of that organization." The study investigates "how the routine decisions of the guidance and counseling personnel within the high school are related to the college/non-college decisions and, by implication, to the occupational choices made by students."

3. Hawaii followed the general practice of giving the designation of State Board for Vocational Education to the exisitng State Board of Education. While the identity of the two state boards might appear to be a means of integrating general and vocational education, the effect is more apparent than real, because of the practice of establishing a separate administrative division for vocational education within the State Department of Education, and the tendency of such separate divisions, to look to the federal vocational education officials for direction and guidance. In this regard, see John Dale Russell and Associates, Vocational Education, Staff Study No. 8, prepared for the Advisory Committee on Education (Washington: U. S. Government Printing Office, 1938), p. 72.

4. Supra, Chapter II, p. 26. The vocational point of view which informed the Smith-Hughes Act favored repetitive skill-training in jobs duplicating real work jobs so far as possible, and claimed that such skill training developed the more general ability to think as well as or better than any other kind of subject matter.

5. Sess. Laws of Hawaii 1964, Act 39, provides for inclusion of the technical schools, except for Hawaii Technical School, in the community colleges to be administered by the University of Hawaii. The technical schools were transferred to the University by executive order of the Governor.

6. The "controlling purpose" of vocational agriculture must be "to fit for useful employment" persons "who have entered upon or who are preparing to enter upon the work of the farm or the farm home." 20 U. S. C. A. 20 (1961).

7. A fascinating historical example of the notion that the school system should provide occupational training for jobs requiring no special training is provided in U. S., Department of the Interior, Bureau of Education, A Survey of Education in Hawaii, Bull. 1920, No. 16 (Washington: U. S. Government Printing Office, 1920), pp. 34-35.

8. Distributive education programs receive federal support. They are cooperative work-study programs; students in them must be employed part-time in a distributive occupation (marketing or merchandising goods or services).

9. The subjects taught in industrial arts in Hawaii's secondary schools for the most part correspond to the skilled trades or to subjects taught in the technical schools. They are: auto mechanics, drafting and drawing, electricity and electronics, home mechanics, industrial crafts, metals, printing, general shop and woodwork.

10. Responses to Legislative Reference Bureau structured interviews. See Appendix C for the interview outline.

11. See Supra, Chapter II, pp. 6-7.

12. See John C. Flanagan and others, The American High-School Student, Final Report for Cooperative Research Project No. 635 U. S. Office of Education (Pittsburgh: Project TALENT Office, University of Pittsburgh, 1964), pp. 15-21. The study reports on the occupational interests of eighteen-year-old boys (17 per cent expect to be engineers) and girls (30 per cent expect to be secretaries, office clerks or typists). Also see the University of the State of New York, Erie County Needs More Vocational Education: A Cooperative Study (Albany: The University of the State of New York, 1954), p. 29, which notes that even among the high school seniors planning to go directly into employment, two out of five planned to enter a skilled occupation. The lack of congruence between occupational "choice" and actual distribution of jobs in the community is shown on pp. 30 and 33. See also Arthur A. Dole, "Educational Choice Is Not Vocational Choice," Vocational Guidance Quarterly 12 (Autumn 1963), 30-35.

13. The adherence to this pedogogical view may be due in part to the fact that it makes discipline easier.

14. As reported by secondary principals during structured interviews with Legislative Reference Bureau staff. See Appendix C for the interview outline.

15. Only 18 credits are required for high school graduation. The required credits must include 4 credits of English, 4 of social studies, 1 of physical education, 1 of mathematics, 1 of science, 1/2 of health and 6-1/2 of electives; however, exceptions are sometimes granted to the mandatory requirements in English and social

studies. These exceptions increase the gap between the general education offered students in the college preparatory program and those in other programs for it is invariably students in the latter group who are excused from mandatory English or social studies classes. A different factor further increasing the gap between the general education offered the two groups is the increasing tendency (amounting almost to a mandatory requirement) to provide all college preparatory students with 2 years each of math and science and for those expecting to major in college in science, math or engineering 4 years each of math and science.

Chapter IV

1. For example, see Norman C. Harris, Curriculum Development for Hawaii's Community Colleges, With Emphasis on Occupational Education (Honolulu: Community College System, Univeristy of Hawaii, 1965).

2. A copy of the questionnaire containing the results is reproduced as Appendix D. The questionnaire was administered to a 5 per cent random sample of all students enrolled in day school. Honolulu Evening Technical School students are not included in the sample.

3. "Attempts have been made to bring teachers of similar curriculum areas together for the purpose of re-evaluating curriculums, methods of presentation, etc. Last spring representatives of each technical school offering business education met in Honolulu for two days in a workshop dealing primarily with curriculum revision. This year teachers of science in the technical schools were also brought together for a workshop. However, these meetings are few and far between and not continuing. The lack of funds limits the number of meetings that may be held." Letter from Mr. Raymond Y. C. Won, Principal, Kapiolani Technical School, March 19, 1965.

4. It is interesting to note that in England, the technical colleges have undergone a considerable increase in enrollment in secondary level general education courses, as an increasing proportion of their students come from modern rather than grammar schools. "A factor of some importance which contributes to the general education work of the technical colleges is the lack of co-ordination between the secondary schools and the technical colleges. This necessitates time being spent on general studies at the technical college which could in many cases have been done equally well by the secondary schools. . . . [The secondary modern] students are less likely than those from secondary grammar schools to have the necessary grounding for the study of science at the technical colleges. . . ." Stephen F. Cotgrove, Technical Education and Social Change (London: George Allen & Unwin, 1958), pp. 135-137.

5. Somewhat more detailed placement records for the initial job are maintained by the schools themselves.

6. The Legislative Reference Bureau submitted a list of written questions to the Division of Vocational, Post-High and Adult Education, Department of Education including "What research or experimental projects have been completed or are in existence in vocational, post-high and adult education?" The department's response to this request indicated no research or experimental projects. This lack makes it not only difficult to evaluate existing programs, but suggests satisfaction with the status quo and a hesitant attitude toward innovation, experimentation, and improvement. Lack of research data and failure to experiment lead to a questioning of the criteria used in adding new programs or modifying existing ones. It should be noted that the same difficulties exist for the same reasons in the secondary vocational programs. Impetus for the little change that has occurred over the years seems to have come almost solely from the federal government rather than from local response to the needs of Hawaii youth.

7. The questionnaire attempted to ascertain whether students planned to enter apprenticeship and why they had chosen day school rather than night school. Their responses indicated an apparent ignorance of what apprenticeship is.

8. It was permissible to check more than one course, and many respondents did so. Psychology was the most popular choice (26 per cent of choices), then art (21 per cent), politics and government (20 per cent), music (14 per cent), and history (10 per cent). Miscellaneous written in choices constituted 8 per cent of all choices.

9. The principal of Kapiolani Technical School notes that of 530 students registered in business education only 15 elected business psychology and 21 chose humanities. The apparent inconsistency of this fact with questionnaire results indicating an interest in academic course work suggests the need to develop far more information on the attitudes and motivations of the technical school students. A possible explanation of the discrepancy is provided by Frank Riessmann, The Culturally Deprived Child (New York: Harper & Row, 1962), which notes that the deprived value education highly, largely because it is viewed as a means towards status and greater power in the world; at the same time, the deprived have vague understandings of education and in general lack school "know-how."

10. Indeed, the community colleges offer a possibility for broadening the opportunities available for students seeking post-secondary occupational training. The technical schools cannot now provide places for all applicants because of limited facilities. In addition, the technical schools screen out applicants for programs on the basis of tests, high school record, and related criteria. As an example, Honolulu Technical School rejected 153 of 761 applicants in the Fall of 1963, and placed another 118 on a waiting list for later admission.

11. Rev. Laws of Hawaii, Sec. 89 (Suppl. 1965).

12. This varies from trade to trade. A few unions have themselves organized the curriculum for apprenticeship programs, and the International Brotherhood of Electrical Workers require their apprentices to pass a journeyman examination.

Chapter V

1. "As long as there was ample opportunity in the economy for unskilled workers with a minimum of education, the thought and energy of educators could be directed to the continual weeding out of the scholastically less able and the selection of the more able to get more and more education and specialization. The lives and careers adversely affected by this selection process have not been a central concern of school people. So much thought and effort was directed to the final products of the educational system--the graduates of the system--that the underlying assumptions and methods of the system were rarely questioned."

   Benjamin S. Bloom, Allison Davis, and Robert Hess, *Compensatory Education for Cultural Deprivation*, based on Working Papers Contributed by Participants in the Research Conference on Education and Cultural Deprivation (New York: Holt, Rinehart and Winston, 1965), p. 4.

2. *Ibid*., p. 39.

3. *Race and Equal Educational Opportunity in Portland's Public Schools*, A Report to the Board of Education, Multnomah School District No. 1 by its Committee on Race and Education (Portland, Ore.: 1964), pp. 139-143

4. N. H. Frank, *Summary Report of the Summer Study on Occupational, Vocational and Technical Education* and *Final Report*, consisting of "Abstract of the Summary Report" and Appendices (Cambridge, Mass.: Massachusetts Institute of Technology, 1965).

5. Frank, *Summary Report*, p. 3.

6. *Ibid*.

7. *Ibid*.

8. *Final Report*, p. 1.

9. *Ibid*., p. 32.

10. *Ibid*., p. 46.

11. Lloyd N. Morrisett, "Preschool Education: Report On a Conference," Social Science Research *Council Items*, 20 (June 1966), 19-21.

12. Harry Stack Sullivan, *The Fusion of Psychiatry and Social Science*, (New York: W. W. Norton, 1964), pp. 153, 154.

13. Arthur P. Coladarci, "The Self-Fulfilling Hypothesis and Educational Change," Paper Presented at the Governor's Education Conference on Educational Issues in a Changing World, Kaanapali, Maui, Hawaii, November 20, 1965, pp. 2-3.

14. Cited in Coladarci, p. 1.

15. R. F. Arragon, "Humanities and Premedical Education," *Journal of Medical Education*, 35 (October 1960), 909.

16. See Philip H. Phenix, *Realms of Meaning: A Philosophy of the Curriculum for General Education* (New York: McGraw-Hill, 1964), especially pp. 312-313 for an excellent analysis of the relationship of the fundamental scholarly disciplines to the human need for intellectual fulfillment. Phenix categorizes human knowledge on the basis of the possible realms of human meaning. He argues that these realms form a whole and that development in all of them is required if a person is to attain excellence in anything at all.

17. Examples of curriculum form following such lines include the work of the Physical Science Study Committee in preparing a new physics course for high schools, projects on mathematics curriculums by the School Mathematics Study Group, the Commission on Mathematics, and the University of Illinois Committee on School Mathematics, and the development of a new high school biology course by the Biological Sciences Curriculum Study.

18. *Final Report*, pp. 22-23.

19. Jerome S. Bruner, *The Process of Education (New York: Random House, 1960), pp. 31-32*.

20. *Final Report*, p. 46.

Chapter VI

1. A good description of the movement may be found in John I. Goodlad, *School Curriculum Reform in the United States* (New York: Fund for the Advancement of Education, 1964) and in Goodlad's article, "The Curriculum," *The Changing American School*, Sixty-fifth Yearbook of the National Society for the Study of Education, Part II, (Chicago: National Society for the Study of Education, 1966).

2. Jerome S. Bruner, *The Process of Education* (New York: Random House, 1960), p. 33.

3. For example, Philip H. Phenix, *Realms of Meaning: A Philosophy of the Curriculum for General Education* (New York: McGraw-Hill, 1964) and Arthur R. King, Jr. and John A. Brownell, *The Curriculum and the Disciplines of Knowledge: A Theory of Curriculum Practice* (New York: John Wiley & Sons, 1966). King and Brownell make an interesting distinction between *disciplined knowledge* and *subject matter*: "The former means the disciplined substance and artful syntax of bodies of thoughtful men; the latter signifies the atomistic, unrelated factual material which has been presented according to an inappropriate theme, or, worse as a potpourri." (p. 94)

4. King and Brownell, p. 94.

5. See the helpful book by Robert F. Mager, *Preparing Instructional Objectives* (Palo Alto: Fearon Publishers, 1962).

6. See Goodlad's summaries listed in footnote 1.

APPENDIX A

Table 1

LANGUAGE OFFERINGS IN HAWAII'S HIGH SCHOOLS
GRADES 9 THROUGH 12
1964-65

District and School[a]	Grades Included in School					Number of Years Offered							
	7-9	7-12	9-12	10-12	Others	French	Spanish	Latin	Japanese	Chinese	German	Hawaiian	Russian
HONOLULU													
Central	x												
Dole	x					1							
Farrington				x		3	3	1	3			1	
Jarrett	x					1							
Kaimuki High				x		3	2	2	2			1	
Kaimuki Int.	x					1	1						
Kalakaua	x					1							
Kalani				x		3	2	2					
Kawananakoa	x						2		2	2			
McKinley				x		2	1	2	3				
Niu Valley	x					1							
Roosevelt				x		3	2	3	2		1		
Stevenson	x					1			2	2			
Washington	x												
CENTRAL OAHU													
Aiea			x			2	2		2			1	
Leilehua			x			2	2	1	1		1		
Radford			x			3	3	3					1
Waialua		x				2	2						
LEEWARD OAHU													
Campbell		x				2	2						
Highlands	x												
Nanaikapono					K-10								
Waianae					8-12	1	1	1				1	
Waipahu			x				2	2					
WINDWARD OAHU													
Castle					8-12	2		2	1				
Kahuku					K-12		2	2					
Kailua High			x			3	3	2			2		
Kailua Int.	x						1	1					
Waiahole					K-9								
Waimanalo					K-9								
HAWAII DISTRICT													
Hilo High				x		4	2	2	1				
Hilo Int.	x					1	2						
Honokaa					K-12		2						
Kalanianaole					K-9								
Kau-Pahala					K-12		1						
Keeau					K-9								
Kohala					K-12		2						
Konawaena		x					2						
Laupahoehoe					K-12		2						
Mountain View					K-9								
Paauilo					K-9								
Pahoa					K-12		1						
Waiakea	x						1						
Waimea					K-9								
KAUAI DISTRICT													
Kapaa		x					2						
Kauai			x				2						
Waimea					K-12		2						

Table 1 (Continued)

District and School[a]	Grades Included in School					Number of Years Offered							
	7-9	7-12	9-12	10-12	Others	French	Spanish	Latin	Japanese	Chinese	German	Hawaiian	Russian
MAUI DISTRICT													
Baldwin			x			3	1		2				
Hana					K-12				1				
Kilohana					K-10								
Lahainaluna			x				2						
Lanai					K-12								
Maui High			x				2		2				
Molokai		x				2							

Source: Compiled from class-size studies prepared by the Department of Education.

[a] Aliamanu (7-8) and Wahiawa (7-8) are the only schools below the ninth grade offering any foreign language courses. Each offers one course in Spanish.

Table 2

HAWAII HIGH SCHOOL PRINCIPALS' VIEWS AS TO THE OBJECTIVES OF VOCATIONAL COURSES IN THEIR SCHOOLS

Vocational Courses	Total No. of Responses	Objective is General Education--Explore Vocational Interests Responses		Objective is Preparation for Post-Secondary Vocational Trade or Technical Training Responses		Objective is Preparation for Immediate Employment Responses	
		No.	%	No.	%	No.	%
SUMMARY BY VOCATIONAL PROGRAMS							
STATE TOTALS	1,253	617	49	452	36	184	15
Agriculture	148	86	58	44	30	18	12
Business Education	487	192	39	197	41	98	20
Home Economics	184	123	67	46	25	15	8
Industrial Arts	434	216	50	165	38	53	12
VOCATIONAL COURSES							
AGRICULTURE							
Agricultural Arts	18	16	89	1	6	1	6
Floriculture	2	2	100	--	--	--	--
Horticulture	20	17	85	2	10	1	5
Landscape Design	1	1	100	--	--	--	--
Vocational Ag. 1 & 2	30	20	67	9	30	1	3
Vocational Ag. 3 & 4	35	14	40	16	46	5	14
Vocational Ag. 5 & 6	30	8	27	13	43	9	30
Practical Arts	4	4	100	--	--	--	--
Part-Time Coop. Prog.	2	--	--	1	50	1	50
Farm Management	3	2	67	1	33	--	--
Young Farmers	1	--	--	1	100	--	--
Life Science	1	1	100	--	--	--	--
Pre-Vocational Ag.	1	1	100	--	--	--	--
BUSINESS EDUCATION							
Advertising	3	1	33	1	33	1	33
Bookkeeping 1 & 2	47	21	45	19	40	7	15
Bookkeeping 3 & 4	15	4	27	6	40	5	33
Business English	20	9	45	7	35	4	20
Business General	23	14	61	8	35	1	4
Business Law	9	5	56	3	33	1	11
Business Machines	25	10	40	10	40	5	20
Business Mathematics	36	17	47	13	36	6	17
Clerical Practice	4	1	25	2	50	1	25
COE (formerly COT)	11	2	18	4	36	5	45
Coop. Distributive Education	22	4	18	8	36	10	45
Data Processing	0	--	--	--	--	--	--
Economics	5	2	40	2	40	1	20
Notehand	14	9	64	3	21	2	14
Office Practice	30	12	40	12	40	6	20
Record Keeping	5	3	60	2	40	--	--
Salesmanship	1	--	--	--	--	1	100
Shorthand 1 & 2	48	20	42	21	44	7	15
Shorthand 3 & 4	42	10	24	20	48	12	29
Typing 1 & 2	44	26	59	15	34	3	7
Typing 3 & 4	49	14	29	26	53	9	18
Typing 5 & 6	21	4	19	10	48	7	33
Typing, Personal	3	2	67	1	33	--	--
Typograph 1 & 2	3	1	33	1	33	1	33
Typograph 3 & 4	2	--	--	1	50	1	50
Cashiering	2	--	--	1	50	1	50
Store Service	2	--	--	1	50	1	50
Office Training	1	1	100	--	--	--	--

Table 2 (continued)

Vocational Courses	Total No. of Responses	Objective is General Education--Explore Vocational Interests Responses		Objective is Preparation for Post-Secondary Vocational Trade or Technical Training Responses		Objective is Preparation for Immediate Employment Responses	
		No.	%	No.	%	No.	%
HOME ECONOMICS							
Homemaking, Gr. 8	9	9	100	--	--	--	--
Homemaking I	27	21	78	6	22	--	--
Homemaking II	28	17	61	9	32	2	7
Homemaking III	13	5	39	5	39	3	23
Clothing Appreciation	7	5	71	1	14	1	14
Family Clothing	25	15	60	8	32	2	8
Family Foods	24	15	63	7	29	2	8
Home Management	8	6	75	1	13	1	13
Home Nursing	7	4	57	2	29	1	14
Family Living	25	20	80	4	16	1	4
Personality and Dress	10	5	50	3	30	2	20
Boys Cooking	1	1	100	--	--	--	--
INDUSTRIAL ARTS							
Auto. Mech. 1 & 2	27	15	56	9	33	3	11
Auto. Mech. 3 & 4	19	6	32	8	42	5	26
Auto. Mech. 5 & 6	5	1	20	2	40	2	40
Auto. Maintenance	0	--	--	--	--	--	--
Coop. Industrial Arts Training	5	1	20	2	40	2	40
Drafting, Arch. 1 & 2	15	8	53	6	40	1	7
Drafting, Arch. 3 & 4	0	--	--	--	--	--	--
Draw., Engineering 1 & 2	6	4	67	2	33	--	--
Draw., Engineering 3 & 4	6	3	50	3	50	--	--
Draw., Mech. 1 & 2	41	24	59	15	37	2	5
Draw., Mech. 3 & 4	33	12	36	16	49	5	15
Draw., Mech. 5 & 6	10	3	30	4	40	3	30
Electricity 1 & 2	15	10	67	4	27	1	7
Electricity 3 & 4	10	3	30	5	50	2	20
Electricity 5 & 6	3	1	33	1	33	1	33
Electronics 1 & 2	16	9	56	6	38	1	6
Electronics 3 & 4	9	3	33	5	56	1	11
Electronics 5 & 6	3	1	33	1	33	1	33
Home Mech. 1 & 2	3	2	67	1	33	--	--
Home Mech. 3 & 4	0	--	--	--	--	--	--
Industrial Crafts 1 & 2	5	2	40	2	40	1	20
Industrial Crafts 3 & 4	0	--	--	--	--	--	--
Metals, General 1 & 2	33	20	61	10	30	3	9
Metals, General 3 & 4	26	9	35	13	50	4	15
Metals, General 5 & 6	11	4	36	5	46	2	18
Printing 1 & 2	8	3	38	3	38	2	25
Printing 3 & 4	5	2	40	2	40	1	20
Printing 5 & 6	0	--	--	--	--	--	--
Printing 7 & 8	0	--	--	--	--	--	--
General Shop	9	8	89	1	11	--	--
Shop, General 1 & 2	9	7	78	2	22	--	--
Shop, General 3 & 4	10	4	40	5	50	1	10
Shop, General 5 & 6	3	1	33	1	33	1	33
Woodwork 1 & 2	31	21	68	9	29	1	3
Woodwork 3 & 4	33	15	46	15	46	3	9
Woodwork 5 & 6	15	5	33	6	40	4	27
Woodwork 7 & 8	0	--	--	--	--	--	--
Vocational Survey	3	3	100	--	--	--	--
Shop Maintenance	2	1	50	1	50	--	--
Graphic Arts	1	1	100	--	--	--	--
Pre-Vocational Auto.	1	1	100	--	--	--	--
Pre-Vocational Machine	1	1	100	--	--	--	--
Pre-Vocational Carpentry	1	1	100	--	--	--	--
Crafts	1	1	100	--	--	--	--

Table 2 (continued)

Source: Tabulated from Legislative Reference Bureau questionnaire requesting high school principals to indicate the objectives of each vocational course offered in their school. Respondents were permitted to check more than one objective for a class.

Note: Percentages do not add to 100 in many instances due to rounding.

Table 3

PLACEMENT OF JUNE 1963 HIGH SCHOOL GRADUATES IN VOCATIONAL AGRICULTURE PROGRAMS MAY-JUNE 1964

County and School	Total	Farming with Parents		Partners in Farm Business (not on home farm)		Working on Farms and Plantation for Wages		In Occupations Related to Farming		Continuing Education in Agriculture Colleges		In Armed Forces		In Non-Agriculture Occupations		Deceased		All Others	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
GRAND TOTAL	322	15	5	1	1	40	12	20	6	9	3	92	29	59	18	1	1	85	26
OAHU	94	1	1	1	1	12	13	9	9			25	27	30	32			16	17
Castle	13			1	8			2	16			3	22	7	54				
Kahuku	18	1	6			2	11					6	33	9	50				
Leilehua	12							1	1			5	4	1	1			5	4
Waialua	21					9	43	2	10			3	14	6	29			1	5
Waianae	20							3	15			3	15	5	25			9	45
Waipahu	10					1	10	1	10			5	50	2	20			1	10
MAUI	82	2	2			11	14	2	2	3	3	16	20	10	12			38	47
Baldwin	13	1	8			4	31	1	8			1	8	1	8			5	38
Hana	9					1	11					3	33	3	33			2	22
Lahainaluna	10					4	40			3	30	1	10	2	20				
Lanai	14											1	7	1	7			12	86
Maui	20	1	5			1	5					4	20	1	5			13	65
Molokai	16					1	6	1	6			6	38	2	12			6	38
KAUAI	40	2	5			3	8	1	2	2	5	17	43	5	12			10	25
Kapaa	11	1	9			1	9	1	9			6	55	2	18				
Kauai	15	1	7			2	13			1	7	4	27	2	13			5	33
Waimea	14									1	7	7	50	1	7			5	36
HAWAII	106	10	9			14	13	8	8	4	4	34	32	14	13	1	1	21	20
Hilo	18	2	11					2	11			5	28	6	33			3	17
Honokaa	15					5	33	2	13			1	6	3	20			4	27
Kau	18					1	6					10	56					7	39
Kohala	19					6	32			4	21	4	21	1	5			4	21
Konawaena	15	8	53					1	7			1	7	4	27	1	7		
Laupahoehoe	11					2	18					7	64					2	18
Pahoa	10							3	30			6	60					1	10

Source: Department of Education.

Note: None fell in the following categories: (1) own farms or are buying; (2) renting farms; or (3) farm managers or plantation supervisors.
Percentages do not add to 100 in many instances due to rounding.

Table 4

PLACEMENT OF HIGH SCHOOL GRADUATES IN VOCATIONAL AGRICULTURE PROGRAMS OUT OF SCHOOL 6 TO 10 YEARS MAY-JUNE 1964

County and School	Total	Own Farms or Are Buying		Renting Farms		Farming with Parents		Partners in Farm Business (not on home farm)		Farm Managers or Plantation Supervisors		Working on Farms and Plantation for Wages		In Occupations Related to Farming		Continuing Education in Agriculture Colleges		In Armed Forces		In Non-Agriculture Occupations		Deceased		All Others	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
GRAND TOTAL	1,618	7	*	3	*	36	2	1	*	3	*	208	13	97	6	10	1	269	17	573	35	21	1	390	24
OAHU	428	4	1			6	1	1	*	3	1	12	3	22	5	2	*	69	16	209	49	7	2	93	22
Castle	43	3	7									1	2	1	2			14	33	16	38			8	18
Kahuku	70											1	1					17	24	25	36	2	3	25	36
Leilehua	117									2	2	1	1	4	3			8	7	74	63			28	24
Waialua	33											1	3	2	6			6	18	21	64			3	9
Waianae	54							1	2					4	7			8	15	34	63	1	2	6	11
Waipahu	111	1	1			6	5			1	1	8	7	11	10	2	2	16	14	39	35	4	4	23	21
MAUI	354					2	1					44	12	21	6			69	19	129	36	1	*	88	25
Baldwin	95											5	5	10	11			37	39	15	16			28	29
Hana (new)																									
Lahainaluna	47											5	11	4	9			1	2	37	79				
Lanai	34											6	18	1	3			8	24	13	38			6	18
Maui	69					2	3					9	13	4	6			9	13	23	33			22	32
Molokai	109											19	17	2	2			14	13	41	38	1	1	32	29
KAUAI	256	2	1			2	1					54	21	22	9	4	2	55	21	81	32	7	3	29	11
Kapaa	64					2	3					17	27	11	17	1	2	7	11	17	27	4	6	5	8
Kauai	100	2	2									19	19	2	2	1	1	20	20	47	47	2	2	7	7
Waimea	92											18	20	9	10	2	2	28	30	17	19	1	1	17	19
HAWAII	580	1	*	3	1	26	4					98	17	32	6	4	1	76	13	154	27	6	1	180	31
Hilo	76	1	1			5	7					5	7	4	5	1	1	19	25	23	30	3	4	15	20
Honokaa	80					1	1					21	26	20	25			4	5	10	13			24	30
Kau	59					1	2					19	32	2	3			6	10	15	25			16	27
Kohala	80											23	29	1	1	1	1	10	13	12	15	1	1	32	40
Konawaena	108			2	2	17	16					8	7	3	3	2	2	14	13	38	35	1	1	23	21
Laupahoehoe	105											18	17					16	15	7	7			64	61
Pahoa	72			1	1	2	3					4	6	2	3			7	10	49	68	1	1	6	8

Source: Department of Education.

Note: * indicates less than one-half of one per cent.
Percentages do not add to 100 in many instances due to rounding.

Table 5

PLACEMENT OF JUNE 1964
HIGH SCHOOL GRADUATES IN DISTRIBUTIVE
EDUCATION AND OFFICE OCCUPATIONS
OCTOBER 1964

	Distributive Education			Office Occupations		
	Total	M	F	Total	M	F
Total No. Graduated June 1964	204	75	129	91	4	87
Not Presently Available for Placement						
Entered Armed Forces	12	11	1	2	1	1
Continued Full-Time School	71	21	50	44	3	41
All Other Reasons	20	7	13	5	0	5
Employed or Available	101	35	66	41	1	40
No. Obtaining Full-Time Jobs						
In Occupation for which Trained	74	24	50	32	0	32
In Field Related to Training	11	4	7	0	0	0
In Field Not Related to Training	4	2	2	1	1	0
Total No. Obtaining	89	30	59	33	1	32
No. Employed Part-Time	0	0	0	1	0	1
No. Unemployed	2	0	2	3	0	3
No. Status Unknown	20	10	10	8	0	8

Source: Department of Education.

Table 6

TOTAL OF SECONDARY SCHOOL PRINCIPALS', COUNSELORS' AND REGISTRARS' RESPONSES TO LEGISLATIVE REFERENCE BUREAU QUESTIONNAIRE ON DESCRIPTION OF VOCATIONAL EDUCATION IN THE HIGH SCHOOL
FALL 1964[a]

1. Description of Vocational Education in the High School.
The following is a list of statements commonly made about vocational education in the high school. Please indicate whether: (1) you agree or disagree with the statement (Column 1); (2) whether you think the statement describes vocational education in Hawaii (Column 2); and (3) whether you think the statement describes vocational education in your school (Column 3). For the purposes of this question the term "vocational" education is used to refer to all industrial arts, business education, agriculture, and home economics courses offered at the secondary level unless noted otherwise.

Statement	Column 1 Describes vocational education or is a substantially true statement about vocational education				Column 2 Describes vocational education in Hawaii or is substantially true of vocational education in Hawaii				Column 3 Describes vocational education in your school or is substantially true of vocational education in your school			
	Agree		Disagree		Agree		Disagree		Agree		Disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(1) Vocational education in high school prepares students for immediate employment upon graduation	12	17	59	83	6	9	65	92	7	10	63	90
(2) A student who has taken several vocational courses in high school will be better prepared for post-high school trade school work than a student who has not taken such courses.	68	96	3	4	66	93	5	7	66	93	5	7
(3) A student who has taken several vocational courses in high school will be better prepared for post-high school collegiate-technical work than a student who has not taken such courses.	59	83	12	17	57	80	14	20	56	79	15	21

Statement	Column 1 Describes vocational education. or is a substantially true statement about vocational education				Column 2 Describes vocational education in Hawaii or is substantially true of vocational education in Hawaii				Column 3 Describes vocational education in your school or is substantially true of vocational education in your school			
	Agree		Disagree		Agree		Disagree		Agree		Disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(4) Vocational education keeps children in school who would otherwise drop out	53	77	16	23	53	75	18	25	52	73	19	27
(5) Vocational education democratizes education because it recognizes that different children have different aptitudes and abilities	62	85	11	15	62	85	11	15	57	79	15	21
(6) Vocational education helps children realistically choose an occupation suitable to their abilities and aptitudes	58	80	15	21	52	71	21	29	49	67	24	33
(7) Many students are more highly motivated in vocational classes because they can see the relation of their school work to their future life.	52	73	19	27	50	70	21	30	45	63	26	37
(8) Vocational education in high school introduces students to job fields rather than giving them the skills necessary to perform a specific job	56	80	14	20	54	76	17	24	52	73	19	27
(9) Vocational education provides an optimum condition for training in thinking for large numbers of students because it is based upon clear and definite visualization of concrete experiences.	42	62	26	38	34	52	32	49	30	45	37	55
(10) Vocational education prepares children to cope adequately with the world of work which they will face in their adult years	31	44	39	56	21	30	49	70	20	28	52	72

Statement	Column 1 Describes vocational education or is a substantially true statement about vocational education				Column 2 Describes vocational education in Hawaii or is substantially true of vocational education in Hawaii				Column 3 Describes vocational education in your school or is substantially true of vocational education in your school			
	Agree		Disagree		Agree		Disagree		Agree		Disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(11) High school vocational education programs and college preparatory programs are important parts of the national social process of separating people into semi-skilled and skilled classes and semi-professional and professional classes.	41	59	28	41	40	58	29	42	38	56	30	44
(12) Industrial arts develops an appreciation and understanding of the history and development of our industrial society, including the various modes of production and the historical relations of man to work.	41	59	29	41	29	41	42	59	25	36	44	64
(13) Agricultural education develops proficiency in farming and marketing farm products.	48	68	23	32	35	50	35	50	32	47	36	53
(14) Agricultural education teaches conservation of resources.	66	92	6	8	59	84	11	16	55	83	11	17
(15) Agricultural education prepares students to manage a farm business efficiently.	41	60	27	40	32	48	35	52	26	41	37	59
(16) Home Economics education prepares students for the responsibilities and activities of the home.	64	90	7	10	62	89	8	11	62	89	8	11
(17) Home Economics education prepares a student to enter occupations in the field of home economics.	30	44	39	57	23	33	46	67	20	29	49	71

Statement	Column 1 Describes vocational education or is a substantially true statement about vocational education				Column 2 Describes vocational education in Hawaii or is substantially true of vocational education in Hawaii				Column 3 Describes vocational education in your school or is substantially true of vocational education in your school			
	Agree		Disagree		Agree		Disagree		Agree		Disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(18) Home Economics education improves the quality of home life.	66	96	3	4	64	94	4	6	60	90	7	10
(19) Business education provides training that will make students employable in clerical occupations.	54	77	16	23	50	73	19	28	47	69	21	31
(20) Distributive education increases the skill, technical knowledge and understanding of management and workers.	55	95	3	5	51	88	7	12	44	80	11	20
(21) Distributive education increases the morale and judgment of management and workers.	41	84	8	16	40	83	8	17	33	75	11	25
(22) Trade and industrial education increases performance skills and develops basic manipulative skills.	62	98	1	2	59	95	3	5	59	92	5	8
(23) Vocational education contributes substantially to our nation's need for trained workers.	44	62	27	38	36	52	33	48	31	46	37	54
(24) Vocational education is the best kind of general education for children who will not go to college.	41	59	29	41	40	55	29	[illegible]	39	51	29	43
(25) Vocational education is a dead end because students who take vocational courses in high school cannot later change their minds and go on to college.	1	1	68	99	1	1	68	99	2	3	68	97
(26) Vocational education is most successful when the student is trained in an environment as similar as possible to the work environment, and when he uses the same operations and tools as are used on the job.	56	80	14	20	49	70	21	30	47	67	23	33

Statement	Column 1 Describes vocational education or is a substantially true statement about vocational education				Column 2 Describes vocational education in Hawaii or is substantially true of vocational education in Hawaii				Column 3 Describes vocational education in your school or is substantially true of vocational education in your school			
	Agree		Disagree		Agree		Disagree		Agree		Disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
(27) Successful vocational education requires repetitive training in the skills required on the job.	48	69	22	31	43	62	26	38	40	60	27	40
(28) Instructors of vocational education are more effective when they have had substantial experience in the trade they teach.	62	90	7	10	57	83	12	17	57	83	12	17
(29) Industrial arts in the high school is an integral part of the vocational education program, sharing common goals with other vocational education programs.	67	97	2	3	66	94	4	6	62	89	8	11
(30) It is better for the many students who lack the ability or motivation to pursue academic programs to be assigned to vocational education programs than to be assigned to general education programs designed for their level of ability and designed to overcome a lack of motivation.	26	38	42	62	29	43	38	57	28	41	40	59
(31) Qualifying comments or remarks. This space is provided for any comments or ideas you may have concerning the foregoing statements. If you need more space please use the back of this sheet.												

Note: Percentages may not add to 100 due to rounding.

[a] The questionnaire contained two parts. The first part is reproduced here as Table 6. The second part appears as Table 10.

Table 7

TRADE EXPERIENCE OF VOCATIONAL TEACHERS IN HAWAII SCHOOLS FALL 1964

	State	Honolulu	Central Oahu	Leeward Oahu	Windward Oahu	Hawaii	Kauai	Maui
TOTAL								
No. of Teachers	432	139	63	45	53	68	20	44
Trade Experience								
Per Cent With	14	17	17	13	21	4	15	7
No. With	61	24	11	6	11	3	3	3
Total No. of Years	385	161	78	32	67	16	21	10
Avg. No. of Years	6	7	7	5	6	5	7	3
AGRICULTURE								
No. of Teachers	68	9	8	7	7	19	5	13
Trade Experience								
Per Cent With	3	--	--	--	--	--	--	15
No. With	2	--	--	--	--	--	--	2
Total No. of Years	5	--	--	--	--	--	--	5
Avg. No. of Years	3	--	--	--	--	--	--	3
BUSINESS EDUCATION								
No. of Teachers	142	50	26	14	17	19	6	10
Trade Experience								
Per Cent With	7	6	15	--	12	--	17	--
No. With	10	3	4	--	2	--	1	--
Total No. of Years	85	25	36	--	19	--	5	--
Avg. No. of Years	9	8	9	--	10	--	5	--
HOME ECONOMICS								
No. of Teachers	93	32	11	11	10	16	3	10
Trade Experience								
Per Cent With	1	--	--	--	--	6	--	--
No. With	1	--	--	--	--	1	--	--
Total No. of Years	5	--	--	--	--	5	--	--
Avg. No. of Years	5	--	--	--	--	5	--	--
INDUSTRIAL ARTS								
No. of Teachers	129	48	18	13	19	14	6	11
Trade Experience								
Per Cent With	37	44	39	46	47	14	33	9
No. With	48	21	7	6	9	2	2	1
Total No. of Years	290	136	42	32	48	12	16	5
Avg. No. of Years	6	6	6	5	5	6	8	5

Source: Department of Education.

Note: Percentages and years may not add to 100 due to rounding.

Table 8

TEACHING EXPERIENCE OF VOCATIONAL TEACHERS
IN HAWAII SCHOOLS
FALL 1964

District and Vocational Program	Total No. of Teachers	Average No. of Years of Teaching Experience	Number of Years of Teaching Experience								
			0	1	2	3-5	6-8	9-11	12-14	15-24	25 Plus
STATE	432	10	8	56	36	88	66	40	34	49	55
Agriculture	66	14	-	5	2	9	8	8	11	12	12
Business Education	142	10	3	11	12	35	27	14	7	17	16
Home Economics	93	11	4	14	8	18	14	3	5	10	17
Industrial Arts	130	8	1	27	14	26	17	16	10	10	10
HONOLULU	139	15	2	11	6	12	26	17	10	18	37
Agriculture	9	20	-	-	-	-	2	1	1	1	4
Business Education	50	15	2	2	1	6	12	5	2	8	12
Home Economics	32	20	-	3	-	1	5	-	2	8	13
Industrial Arts	48	11	-	6	5	5	7	11	5	1	8
CENTRAL OAHU	63	8	-	10	7	19	14	2	1	8	2
Agriculture	8	14	-	-	-	2	1	1	1	3	-
Business Education	26	8	-	3	3	11	5	-	-	4	-
Home Economics	11	6	-	3	2	2	3	-	-	-	1
Industrial Arts	18	6	-	4	2	4	5	1	-	1	1
LEEWARD OAHU	45	7	6	7	5	12	4	1	3	5	2
Agriculture	7	18	-	-	1	1	-	-	-	3	2
Business Education	14	7	1	1	2	3	3	1	1	2	-
Home Economics	11	2	4	2	1	4	-	-	-	-	-
Industrial Arts	13	4	1	4	1	4	1	-	2	-	-
WINDWARD OAHU	53	7	-	9	11	17	4	2	3	5	2
Agriculture	7	14	-	1	-	1	1	-	1	1	2
Business Education	17	9	-	-	4	6	2	1	1	3	-
Home Economics	10	4	-	1	3	5	-	-	1	-	-
Industrial Arts	19	5	-	7	4	5	1	1	-	1	-
HAWAII	68	10	-	12	4	16	8	7	7	6	8
Agriculture	18	14	-	-	-	3	3	3	4	3	2
Business Education	19	9	-	4	1	4	4	3	-	-	3
Home Economics	16	9	-	4	2	5	-	1	1	-	3
Industrial Arts	15	7	-	4	1	4	1	1	1	3	-

Table 8 (continued)

District and Vocational Program	Total No. of Teachers	Average No. of Years of Teaching Experience	Number of Years of Teaching Experience								
			0	1	2	3-5	6-8	9-11	12-14	15-24	25 Plus
KAUAI	20	10	-	2	1	4	1	4	5	2	1
Agriculture	5	14	-	-	-	-	1	1	2	-	1
Business Education	6	9	-	-	-	1	-	3	2	-	-
Home Economics	3	8	-	1	-	1	-	-	-	1	-
Industrial Arts	6	8	-	1	1	2	-	-	1	1	-
MAUI	44	10	-	5	2	8	9	7	5	5	3
Agriculture	13	8	-	4	1	2	-	2	2	1	1
Business Education	10	8	-	1	1	4	1	1	1	-	1
Home Economics	10	9	-	-	-	-	6	2	1	1	-
Industrial Arts	12	13	-	1	-	2	2	2	1	3	1

Source: Department of Education.

Table 9

CERTIFICATES AND DEGREES OF HAWAII VOCATIONAL TEACHERS TRAINED IN HAWAII AND ON THE MAINLAND FALL 1964[a]

District and Vocational Program	Total Vocational Teachers[b]	EDUCATIONAL BACKGROUND OF VOCATIONAL TEACHERS (IN PER CENTS)												
		Educ. All at University of Hawaii	Educ. All at Other Hawaii Inst.	Educ. All at Mainland Inst.	Educ. at Both Hawaii & Mainland Insts.	B.A. Degree	B.A. Degree in Subject Which Teaching	5th Year Cert.	M.A. Degree	M.A. Degree in Subject Which Teaching	Tech. or Trade School Cert. Only	B.A. Degree Plus Tech. or Trade School Cert.	Degree Less Than B.A. Degree (Normal School Cert.)	Other Degrees
STATE	432	50	1	43	7	94	80	89	14	13	2	1	4	*
Honolulu	139	53	--	38	9	91	82	90	20	17	1	1	1	--
Central Oahu	63	43	2	52	3	94	87	90	14	13	--	--	5	--
Leeward Oahu	45	56	2	38	4	89	56	73	13	13	2	--	7	--
Windward Oahu	53	49	--	47	4	96	70	89	11	11	2	4	2	--
Hawaii	68	49	1	43	7	97	85	96	9	9	--	--	1	--
Kauai	20	45	--	45	10	95	90	90	10	10	5	--	--	--
Maui	44	48	5	45	5	93	84	84	7	7	5	--	2	5
AGRICULTURE	66	83	2	13	5	98	84	92	6	5	2	--	--	--
Honolulu	9	89	--	11	--	100	78	100	22	11	--	--	--	--
Central Oahu	8	75	--	25	--	100	100	100	--	--	--	--	--	--
Leeward Oahu	7	100	--	--	--	100	43	86	--	--	--	--	--	--
Windward Oahu	7	71	--	14	14	100	57	100	--	--	--	--	--	--
Hawaii	18	83	--	6	11	100	95	100	11	11	--	--	--	--
Kauai	5	100	--	--	--	100	100	100	--	--	--	--	--	--
Maui	12	71	8	29	--	92	92	63	--	--	8	--	--	--
BUSINESS EDUCATION	142	47	1	42	9	92	82	87	12	11	1	--	6	1
Honolulu	50	52	--	36	12	94	88	88	18	16	--	--	4	--
Central Oahu	26	38	--	58	4	85	81	85	8	8	--	--	12	--
Leeward Oahu	14	50	7	36	7	79	64	71	14	14	--	--	21	--
Windward Oahu	17	71	--	29	--	94	65	82	--	--	6	--	--	--
Hawaii	19	38	5	41	16	100	83	100	5	5	--	--	--	--
Kauai	6	17	--	50	33	100	100	83	17	17	--	--	--	--
Maui	10	40	--	60	--	90	90	90	20	20	--	--	10	20
HOME ECONOMICS	93	63	--	30	6	98	88	94	10	9	--	--	--	--
Honolulu	32	66	--	22	13	100	97	97	13	9	--	--	--	--
Central Oahu	11	73	--	27	--	100	100	100	9	9	--	--	--	--
Leeward Oahu	11	73	--	18	9	91	55	73	9	9	--	--	--	--
Windward Oahu	10	50	--	40	10	100	90	100	20	20	--	--	--	--
Hawaii	16	56	--	44	--	94	81	88	6	6	--	--	--	--
Kauai	3	67	--	33	--	100	100	100	--	--	--	--	--	--
Maui	10	60	--	40	--	100	90	100	--	--	--	--	--	--

Table 9 (continued)

District and Vocational Program	Total Vocational Teachers[b]	EDUCATIONAL BACKGROUND OF VOCATIONAL TEACHERS (IN PER CENTS)												
		Educ. All at University of Hawaii	Educ. All at Other Hawaii Inst.	Educ. All at Mainland Inst.	Educ. at Both Hawaii & Mainland Insts.	B.A. Degree	B.A. Degree in Subject Which Teaching	5th Year Cert.	M.A. Degree	M.A. Degree in Subject Which Teaching	Tech. or Trade School Cert. Only	B.A. Degree Plus Tech. or Trade School Cert.	Degree Less Than B.A. Degree (Normal School Cert.)	Other Degrees
INDUSTRIAL ARTS	131	25	2	68	5	89	70	85	23	21	4	2	5	--
Honolulu	48	37	--	56	6	81	67	85	27	25	4	2	10	--
Central Oahu	18	17	6	72	6	100	83	89	33	28	--	--	--	--
Leeward Oahu	13	23	--	77	--	92	54	69	23	23	8	--	--	--
Windward Oahu	19	21	--	79	--	95	68	84	21	21	--	11	5	--
Hawaii	15	12	--	88	--	93	81	93	13	13	--	--	7	--
Kauai	6	17	--	83	--	83	67	83	17	17	17	--	--	--
Maui	12	21	8	54	17	92	67	88	8	8	8	--	--	--

Source: Department of Education.

Note: * indicates less than one-half of one per cent.
Percentages may not add to 100 due to rounding.

[a] Teachers are counted in the vocational program in which they teach although they may teach some non-vocational courses. Teachers teaching in more than one vocational field were counted as a fraction in each field; for example, a person teaching both agriculture and industrial arts courses is counted as half a position in each field.

[b] The per cents in columns 2 to 14 represent the per cent that the number of teachers in each category is of the total number of teachers listed in column 1. The same teacher will appear in several different categories.

Table 10

TOTAL OF SECONDARY SCHOOL PRINCIPALS', COUNSELORS' AND REGISTRARS' RESPONSES TO LEGISLATIVE REFERENCE BUREAU QUESTIONNAIRE ON FACTORS GOVERNING STUDENT ENROLLMENT IN VOCATIONAL COURSES
FALL 1964[a]

The following table is intended to determine what factors you believe are in fact considered in your school when enrolling students in vocational courses. Please check the appropriate columns. Answer in terms of your opinion of the actual practices of your school.

Factor	Significant factor in determining whether student is enrolled in vocational courses				Student with	Likely to be enrolled in vocational courses					
	Yes		No			Yes		No		Don't know	
	No.	%	No.	%		No.	%	No.	%	No.	%
(1) Grade Record	39	59	27	41	a. Good grades	19	39	30	61		
					b. Average grades	58	94	4	7		
					c. Poor grades	57	97	2	3		
(2) Overall academic record (grades, test scores, aptitudes, teacher or counselor recommendations, etc.)	60	92	5	8	a. Good academic record	24	47	27	53		
					b. Average academic record	60	95	3	5		
					c. Poor academic record	56	93	4	7		
(3) Reading Level	30	49	31	51	a. Good reader	18	37	30	61	1	2
					b. Average reader	55	90	6	10		
					c. Poor reader	61	100				
(4) Intelligence Quotient	26	42	36	58	a. High Level	14	33	28	65	1	2
					b. Average level	53	93	3	5	1	2
					c. Low level	51	96	1	2	1	2
(5) Aptitude Tests	41	68	19	32	a. High mechanical and dexterity aptitude	38	70	10	19	6	11
					b. Medium mechanical and dexterity aptitude	48	86	2	4	6	11
					c. Low mechanical and dexterity aptitude	32	65	9	18	8	16
(6) Achievement Tests	36	57	27	43	a. High on academic subjects	14	29	32	67	2	4
					b. Medium on academic subjects	57	93	4	7		
					c. Low on academic subjects	57	97	1	2	1	2

Factor	Significant factor in determining whether student is enrolled in vocational courses				Student with	Likely to be enrolled in vocational courses					
	Yes		No			Yes		No		Don't know	
	No.	%	No.	%		No.	%	No.	%	No.	%
(7) Teacher or Counselor recommendation	63	93	5	7	a. High academic potential	14	28	35	69	2	4
					b. Average academic potential	59	92	4	6	1	2
					c. Low academic potential	57	92	3	5	2	3
(8) Student desire to take vocational courses	62	97	2	3	a. High desire and high academic potential	25	45	28	50	3	5
					b. High desire and average academic potential	42	71	15	25	2	3
					c. High desire and low academic potential	54	86	7	11	2	3
					d. Average desire and high academic potential	26	46	27	47	4	7
					e. Average desire and average academic potential	54	87	6	10	2	3
					f. Average desire and low academic potential	57	92	3	5	2	3
					g. Low desire and high academic potential	19	35	34	62	2	4
					h. Low desire and average academic potential	37	62	20	33	3	5
					i. Low desire and low academic potential	43	72	15	25	2	3

Factor	Significant factor in determining whether student is enrolled in vocational courses				Student	Likely to be enrolled in vocational courses					
	Yes		No			Yes		No		Don't know	
	No.	%	No.	%		No.	%	No.	%	No.	%
(9) Occupation of Parents	16	25	47	75							
					a. Professional	11	20	36	64	9	16
					b. Skilled	30	52	18	31	10	17
					c. Semi-skilled	50	77	4	6	11	17
					d. Unskilled	53	84	2	3	8	13
					e. Sales, clerical	45	69	9	14	11	17
					f. Service	42	69	6	10	13	21
(10) Income Level of Parents	19	31	42	69							
					a. High income	11	20	31	56	13	24
					b. Middle income	44	69	9	14	11	17
					c. Low income	50	79	5	8	8	13
(11) Parent's desire to have child take vocational program	44	70	19	30							
					a. High desire of parents and high academic potential of child	16	29	31	56	8	15
					b. High desire of parents and average academic potential of child	32	55	19	33	7	12
					c. High desire of parents and low academic potential of child	41	70	10	17	8	14
					d. Average desire of parents and high academic potential of child	24	43	24	43	8	14
					e. Average desire of parents and average academic potential of child	48	80	6	10	6	10
					f. Average desire of parents and low academic potential of child	49	82	4	7	7	12

Factor	Significant factor in determining whether student is enrolled in vocational courses				Student	Likely to be enrolled in vocational courses					
	Yes		No			Yes		No		Don't know	
	No.	%	No.	%		No.	%	No.	%	No.	%
(11) Parent's desire to have child take vocational program (continued)	44	70	19	30							
					g. Low desire of parents and high academic potential of child	7	13	38	69	10	18
					h. Low desire of parents and average academic potential of child	35	59	14	24	10	17
					i. Low desire of parents and low academic potential of child	42	71	8	14	9	15

(12) Qualifying Comments or remarks. This space is provided for any comments or ideas you may have concerning the enrollment of students in vocational courses. If you need more space please use the back of this sheet.

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[a] This table presents totals for the detailed breakdown included in Table 10 continued.

Table 11

NUMBER OF VOCATIONAL COURSES TAKEN BY HAWAII HIGH SCHOOL SENIORS DURING SECONDARY SCHOOL CAREER FALL 1964

District and School	Total Seniors	Vocational Courses Taken													
		None		One		Two		Three		Four		Five		Six or More	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
STATE	9,538	779	8	1,285	13	1,496	16	1,537	16	1,379	15	1,153	12	1,909	20
HONOLULU	3,705	536	15	666	18	648	18	649	18	493	13	361	10	352	9
Farrington	930	90	10	170	18	230	25	222	24	134	14	61	7	23	3
Kaimuki	872	123	14	196	22	133	15	140	16	106	12	97	11	77	9
Kalani	583	88	15	122	21	78	13	68	12	68	12	79	14	80	14
McKinley	660	80	12	56	9	99	15	111	17	91	14	81	12	142	22
Roosevelt	660	155	24	122	19	108	16	108	16	94	14	43	7	30	5
CENTRAL OAHU	1,371	120	9	209	15	241	18	199	15	171	13	166	12	265	19
Aiea	319	33	10	36	11	42	13	42	13	49	15	33	10	84	26
Leilehua	462	26	6	49	11	72	16	78	17	61	13	69	15	107	23
Radford	445	39	9	84	19	82	18	63	14	46	10	58	13	73	16
Waialua	145	22	15	40	28	45	31	16	11	15	10	6	4	1	1
LEEWARD OAHU	829	7	1	95	12	87	11	108	13	155	19	132	16	245	30
Campbell	208	7	3	19	9	26	13	20	10	46	22	36	17	54	26
Waianae	251	--	--	56	22	23	9	38	15	49	20	22	9	63	25
Waipahu	370	--	--	20	5	38	10	50	14	60	16	74	20	128	35
WINDWARD OAHU	1,118	37	3	114	10	144	13	189	17	192	17	149	13	293	26
Castle	338	12	4	34	10	40	12	51	15	66	20	58	17	77	23
Kahuku	115	1	1	1	1	7	6	17	15	13	11	15	13	61	53
Kailua	665	24	4	79	12	97	15	121	18	113	17	76	11	155	23
HAWAII	1,200	74	6	121	10	185	15	179	15	179	15	159	13	303	25
Hilo	724	11	2	91	13	145	20	123	17	96	13	97	13	161	22
Honokaa	100	18	18	2	2	11	11	17	17	22	22	13	13	17	17
Kau	49	--	--	1	2	4	8	4	8	2	4	5	10	33	67
Kohala	58	--	--	--	--	--	--	6	10	4	7	10	17	38	66
Kona	198	45	23	27	14	19	10	21	11	34	17	28	14	24	12
Laupahoehoe	46	--	--	--	--	4	9	7	15	15	33	3	7	17	37
Pahoa	25	--	--	--	--	2	8	1	4	6	24	3	12	13	52
KAUAI	553	1	*	25	5	70	13	82	15	90	16	74	13	211	38
Kapaa	161	--	--	7	4	24	15	18	11	21	13	21	13	70	44
Kauai	216	1	1	12	6	29	13	32	15	35	16	29	13	78	36
Waimea	176	--	--	6	3	17	10	32	18	34	19	24	14	63	36
MAUI	762	4	1	55	7	121	16	131	17	99	13	112	15	240	32
Baldwin	332	4	1	45	14	80	24	76	23	40	12	24	7	63	19
Hana	18	--	--	1	6	--	--	2	11	--	--	--	--	15	83
Lahainaluna	109	--	--	3	3	14	13	20	18	15	14	28	26	29	27
Lanai	43	--	--	1	2	1	2	1	2	6	14	4	9	30	70
Maui	177	--	--	5	3	26	15	23	13	20	11	31	18	72	41
Molokai	83	--	--	--	--	--	--	9	11	18	22	25	30	31	37

Source: Legislative Reference Bureau questionnaire to secondary school principals.

Note: *Indicates less than one-half of one per cent.
Percentages may not add/due to rounding.

Table 12

PER CENT OF TOTAL STUDENT CREDIT HOURS IN HAWAII SECONDARY SCHOOLS DEVOTED TO VOCATIONAL COURSES BY PROGRAMS

FALL 1964

District and School*	Vocational Programs				
	Total	Agriculture	Business Education	Home Economics	Industrial Arts
STATE	17	1	6	3	5
Honolulu	16	**	7	3	5
Central Oahu	17	1	8	3	4
Leeward Oahu	17	2	6	4	5
Windward Oahu	16	2	5	3	6
Hawaii	17	2	6	3	5
Kauai	16	2	6	3	5
Maui	19	3	7	3	5
HONOLULU	16	**	7	3	5
Central	11	--	4	3	4
Dole	12	1	3	4	4
Farrington	26	**	13	3	9
Jarrett	12	--	5	4	4
Kaimuki High	19	1	10	2	5
Kaimuki Int.	13	1	4	4	3
Kalakaua	12	1	4	4	3
Kalani	18	**	9	3	6
Kawananakoa	12	1	3	3	5
McKinley	21	1	7	6	7
Niu Valley	13	--	5	4	3
Roosevelt	14	1	6	2	5
Stevenson	11	--	4	4	4
Washington	10	--	2	3	4
CENTRAL OAHU	17	1	8	3	4
Aiea High	21	**	9	5	7
Aiea Int.	14	2	4	4	3
Aliamanu	11	--	3	4	4
Leilehua	20	2	12	2	5
Radford	17	**	10	2	4
Wahiawa	11	1	3	4	3
Waialua	19	4	8	3	4
LEEWARD OAHU	17	2	6	4	5
Campbell	17	--	7	3	6
Ewa	16	4	5	3	4
Highlands	15	3	4	6	2
Nanaikapono	17	2	5	5	4
Waianae	22	4	6	5	7
Waipahu	24	2	10	6	6

Table 12 (Continued)

District and School*	Vocational Programs				
	Total	Agriculture	Business Education	Home Economics	Industrial Arts
WINDWARD OAHU	16	2	5	3	6
Castle	21	2	7	4	8
Kahuku	19	5	6	4	5
Kailua High	19	1	7	3	7
Kailua Int.	11	--	4	3	3
Waiahole	21	4	--	5	12
Waimanalo	16	5	--	5	7
HAWAII	17	2	6	3	5
Hilo High	23	2	9	3	8
Hilo Int.	11	--	4	4	3
Honokaa	21	5	7	4	5
Kalanianaole	18	4	5	4	4
Kau	19	6	5	4	5
Keeau	3	--	--	3	--
Kohala	18	4	7	4	3
Kona	21	2	8	3	7
Laupahoehoe	20	3	7	4	6
Mountain View	7	3	--	4	--
Naalehu	4	4	--	--	--
Paauilo	6	2	--	3	--
Pahoa	20	7	8	3	2
Waiakea	10	2	2	3	2
Waimea	6	2	--	4	--
KAUAI	16	2	6	3	5
Eleele	7	7	--	--	--
Kapaa	19	2	6	4	7
Kauai	18	2	7	5	5
Waimea	20	2	8	3	7
MAUI	19	3	7	3	5
Baldwin	21	3	9	3	6
Hana	21	3	6	7	5
Kamehameha III	10	--	--	--	10
Kilohana	16	4	7	1	4
Lahainaluna	24	5	7	3	9
Lanai	22	6	8	5	4
Maui	24	4	9	5	6
Molokai	22	6	8	4	4

Source: Department of Education.

*The following schools which include the 7th, 8th and/or 9th grades do not offer any vocational courses:

Leeward Oahu - Ahrens, Waianae El , Waipahu El.
Windward Oahu - Hauula, King, Laie
Hawaii - Holualoa, Honaunau, Honokohau, Hookena, Kawaihae, Milolii
Kauai - Anahola, Hanalei, Kalaheo, Kaumakani, Kekaha, Kilauea, Koloa, Niihau, Wilcox
Maui - Haiku, Honokohua, Iao, Kahului, Kaunakakai, Kaunoa, Keanae, Kihei, Kula, Lihikai, Makawao, Maunaloa, Paia, Puunene, Waihee

**Percentages may not add/due to rounding.

Table 13

PER CENT OF TOTAL STUDENT CREDIT HOURS IN VOCATIONAL COURSES IN HAWAII SECONDARY SCHOOLS DEVOTED TO EACH VOCATIONAL PROGRAM FALL 1964

District and School [a]	Vocational Programs			
	Agriculture	Business Education	Home Economics	Industrial Arts
STATE	9	39	21	31
Honolulu	3	41	22	34
Central Oahu	7	46	20	27
Leeward Oahu	12	34	25	29
Windward Oahu	10	33	21	37
Hawaii	14	36	20	30
Kauai	14	34	20	32
Maui	17	37	17	29
HONOLULU	3	41	22	34
Central	--	35	29	37
Dole	9	23	30	37
Farrington	1	52	11	36
Jarrett	--	39	31	30
Kaimuki High	3	55	13	29
Kaimuki Int.	10	32	32	26
Kalakaua	7	36	34	23
Kalani	2	50	14	34
Kawananakoa	8	28	26	39
McKinley	3	32	30	35
Niu Valley	--	40	34	26
Roosevelt	4	45	16	36
Stevenson	--	34	31	35
Washington	--	24	33	43
CENTRAL OAHU	7	46	20	27
Aiea High	2	42	23	33
Aiea Int.	18	29	33	21
Aliamanu	--	26	37	38
Leilehua	8	59	8	24
Radford	3	60	14	23
Wahiawa	12	24	39	25
Waialua	20	41	16	24
LEEWARD OAHU	12	34	25	29
Campbell	--	42	21	37
Ewa	25	29	21	25
Highlands	21	25	37	16
Nanaikapono	13	32	33	23
Waianae	20	28	21	32
Waipahu	8	40	26	27

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Table 13 (Continued)

District and School[a]	Vocational Programs			
	Agriculture	Business Education	Home Economics	Industrial Arts
WINDWARD OAHU	10	33	21	37
Castle	9	34	19	37
Kahuku	24	32	19	25
Kailua High	6	39	17	38
Kailua Int.	--	38	31	31
Waiahole	18	--	22	60
Waimanalo	30	--	30	41
HAWAII	14	36	20	30
Hilo High	8	40	14	37
Hilo Int.	--	37	32	31
Honokaa	25	32	21	22
Kalanianaole	22	30	25	24
Kau	33	24	19	25
Keeau	--	--	100	--
Kohala	21	38	23	18
Kona	10	40	16	33
Laupahoehoe	18	36	18	28
Mountain View	43	--	57	--
Naalehu	100	--	--	--
Paauilo	42	--	58	--
Pahoa	34	40	16	10
Waiakea	19	24	33	24
Waimea	39	--	61	--
KAUAI	14	34	20	32
Eleele	100	--	--	--
Kapaa	13	31	19	37
Kauai	12	36	25	27
Waimea	10	39	17	35
MAUI	17	37	17	29
Baldwin	14	43	15	29
Hana	15	29	34	22
Kamehameha III	--	--	--	100
Kilohana	26	42	9	23
Lahainaluna	20	31	13	36
Lanai	25	36	21	19
Maui	16	38	20	26
Molokai	29	35	17	19

Source: Department of Education.

Note: The following schools which include the 7th, 8th and/or 9th grades do not offer any vocational courses:

Leeward Oahu - Ahrens, Waianae El., Waipahu El.
Windward Oahu - Hauula, King, Laie
Hawaii - Holualoa, Honaunau, Honokohau, Hookena, Kawaihae, Milolii
Kauai - Anahola, Hanalei, Kalaheo, Kaumakani, Kekaha, Kilauea, Koloa, Niihau, Wilcox
Maui - Haiku, Honokohua, Iao, Kahului, Kaunakakai, Kaunoa, Keanae, Kihei, Kula, Lihikai, Makawao, Paia, Puunene, Waihee

[a] Percentages may not add/due to rounding.

Table 14

AVERAGE CLASS SIZES OF VOCATIONAL COURSES IN HAWAII SECONDARY SCHOOLS BY VOCATIONAL COURSE OFFERINGS IN EACH HAWAII SCHOOL DISTRICT FALL 1964

Vocational Course Offering	State Classes		Honolulu Classes		Central Oahu Classes		Leeward Oahu Classes		Windward Oahu Classes		Hawaii Classes		Kauai Classes		Maui Classes	
	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size
GRAND TOTAL	2029	28	669	30	298	30	223	29	261	28	269	26	103	26	206	22
AGRICULTURE	214	23	21	29	27	25	29	27	27	26	52	19	17	22	41	19
Ag. Arts	72	26	10	28	11	23	10	32	11	28	16	24	5	29	9	21
Farm Management	3	9	--	--	2	12	--	--	--	--	--	--	1	3	--	--
Floriculture	3	28	1	33	--	--	1	30	1	20	--	--	--	--	--	--
Horticulture 1 & 2	37	28	8	30	5	30	6	30	5	31	7	21	--	--	6	24
Horticulture 5 & 6	2	30	2	30	--	--	--	--	--	--	--	--	--	--	--	--
Practical Arts	1	27	--	--	--	--	--	--	1	27	--	--	--	--	--	--
Voc. Ag. 1 & 2	40	21	--	--	5	27	6	22	4	21	12	20	4	20	9	19
Voc. Ag. 3 & 4	37	20	--	--	3	29	6	23	3	26	10	15	6	21	9	20
Voc. Ag. 5 & 6	19	14	--	--	1	12	--	--	2	15	7	14	1	13	8	13
BUSINESS	704	31	249	33	128	32	74	30	75	32	81	30	33	28	64	26
Bookkeeping 1 & 2	56	31	15	33	9	34	5	33	4	36	11	28	4	26	8	27
Bookkeeping 3 & 4	8	25	5	28	1	22	1	12	--	--	1	26	--	--	--	--
Bus. English	13	35	5	37	2	37	--	--	2	38	3	22	1	28	--	--
Bus. General	43	31	13	36	10	37	4	27	3	25	4	27	2	24	7	22
Bus. Law	3	36	1	39	1	32	--	--	1	37	--	--	--	--	--	--
Bus. Machines	23	27	13	30	7	22	2	34	--	--	--	--	--	--	1	11
Bus. Math.	46	33	15	34	9	33	5	37	6	28	3	30	2	29	6	34
Clerical Practice	3	21	--	--	--	--	1	28	1	14	--	--	1	20	--	--
COE	5	23	2	33	1	25	--	--	2	13	--	--	--	--	--	--
Coop. Dist. Ed.	8	28	3	32	2	28	--	--	2	28	1	21	--	--	--	--
Economics	2	39	--	--	2	39	--	--	--	--	--	--	--	--	--	--
Notehand	17	28	10	32	2	30	--	--	1	24	2	14	--	--	2	17
Office Practice	17	22	3	31	1	17	2	26	2	13	2	12	3	15	4	29
Record Keeping	5	36	1	33	2	39	--	--	2	36	--	--	--	--	--	--
Shorthand 1 & 2	54	29	18	33	9	34	5	30	4	28	8	22	4	23	6	25
Shorthand 3 & 4	22	18	7	24	4	22	3	14	1	26	3	10	1	16	3	11
Typing 1 & 2	180	35	47	33	34	34	26	33	20	36	23	43	12	36	18	30
Typing 3 & 4	62	32	22	35	9	32	7	27	7	31	7	30	3	29	7	28
Typing 5 & 6	19	29	9	32	6	26	2	28	--	--	2	22	--	--	--	--
Typing, Personal	117	33	59	33	17	33	11	30	17	35	11	34	--	--	2	13
Typograph 1 & 2	1	21	1	21	--	--	--	--	--	--	--	--	--	--	--	--
HOME ECONOMICS	421	29	155	28	54	33	53	31	51	30	55	26	19	28	34	22
Clothing Appreciation	5	28	3	30	--	--	--	--	1	28	--	--	1	23	--	--
Family Clothing	28	29	5	28	4	32	6	31	5	36	5	24	--	--	3	20
Family Foods	51	31	22	30	9	34	6	28	4	35	7	30	1	23	2	27
Family Living	58	31	20	36	4	38	10	30	8	29	5	24	4	32	7	19
Homemaking	183	29	79	27	28	31	23	30	24	31	19	28	5	26	5	21
Homemaking I	60	26	12	19	8	34	7	34	5	22	13	21	4	32	11	26
Homemaking II	20	27	6	30	--	--	1	32	3	26	3	28	3	31	4	17
Homemaking III	6	20	3	26	--	--	--	--	1	24	--	--	1	7	1	12
Home Management	2	23	1	24	--	--	--	--	--	--	1	21	--	--	--	--

Table 14 (Continued)

Vocational Course Offering	State Classes No.	State Classes Size	Honolulu Classes No.	Honolulu Classes Size	Central Oahu Classes No.	Central Oahu Classes Size	Leeward Oahu Classes No.	Leeward Oahu Classes Size	Windward Oahu Classes No.	Windward Oahu Classes Size	Hawaii Classes No.	Hawaii Classes Size	Kauai Classes No.	Kauai Classes Size	Maui Classes No.	Maui Classes Size
HOME ECONOMICS (continued)																
Home Nursing	2	36	2	36	--	--	--	--	--	--	--	--	--	--	--	--
Personality	5	25	2	19	--	--	--	--	--	--	2	31	--	--	1	27
1240	1	29	--	--	1	29	--	--	--	--	--	--	--	--	--	--
INDUSTRIAL ARTS	690	26	244	27	89	27	67	28	108	25	81	26	34	25	67	19
Auto Mech. 1 & 2	54	29	22	30	6	28	6	34	8	32	6	29	1	28	5	19
Auto Mech. 3 & 4	14	23	8	26	--	--	--	--	1	27	2	20	--	--	3	14
Auto Mech. 5 & 6	3	4	--	--	--	--	--	--	--	--	1	4	--	--	2	5
Coop. Ind. Arts	5	21	3	25	--	--	2	15	--	--	--	--	--	--	--	--
Drafting, Arch. 1 & 2	7	21	2	19	2	18	--	--	1	36	1	12	--	--	1	22
Drafting, Arch. 3 & 4	2	16	2	16	--	--	--	--	--	--	--	--	--	--	--	--
Draw., Engineering 1 & 2	14	21	2	30	2	15	--	--	5	21	--	--	1	15	4	22
Draw., Engineering 3 & 4	2	15	1	29	--	--	--	--	1	1	--	--	--	--	--	--
Draw., Mech. 1 & 2	79	27	19	31	12	29	9	29	8	28	17	25	7	22	7	22
Draw., Mech. 3 & 4	26	19	3	22	5	24	5	14	3	27	5	22	1	5	4	8
Draw., Mech. 5 & 6	7	12	2	25	1	17	--	--	2	2	2	6	--	--	--	--
Electricity 1 & 2	23	31	9	30	1	37	3	22	5	31	4	36	1	34	--	--
Electricity 3 & 4	5	25	4	25	--	--	--	--	--	--	--	--	1	23	--	--
Electricity 5 & 6	1	25	1	25	--	--	--	--	--	--	--	--	--	--	--	--
Electronics 1 & 2	21	30	10	30	2	34	--	--	3	34	2	33	4	27	--	--
Electronics 3 & 4	6	19	3	23	1	16	--	--	2	16	--	--	--	--	--	--
Electronics 5 & 6	2	6	2	6	--	--	--	--	--	--	--	--	--	--	--	--
Home Mech. 1 & 2	2	19	1	23	--	--	--	--	--	--	1	15	--	--	--	--
Industrial Crafts 1 & 2	26	28	5	32	3	32	3	33	11	25	3	24	--	--	1	36
Industrial Crafts 3 & 4	3	9	--	--	--	--	--	--	3	9	--	--	--	--	--	--
Metals, General 1 & 2	53	29	20	29	6	33	7	30	8	28	5	32	4	28	3	24
Metals, General 3 & 4	15	18	7	17	3	21	1	11	2	23	--	--	--	--	2	16
Metals, General 5 & 6	4	6	--	--	1	12	--	--	1	2	--	--	--	--	2	6
Printing 1 & 2	12	19	10	19	--	--	--	--	2	23	--	--	--	--	--	--
Printing 3 & 4	5	13	3	14	--	--	--	--	2	12	--	--	--	--	--	--
Printing 5 & 6	3	2	3	2	--	--	--	--	--	--	--	--	--	--	--	--
Shop, General	124	29	54	30	22	30	6	30	24	27	12	29	2	22	4	27
Shop, General 1 & 2	68	25	27	26	6	21	13	30	4	25	10	25	--	--	8	21
Shop, General 3 & 4	7	15	--	--	--	--	--	--	1	7	2	17	--	--	4	17
Shop, General 5 & 6	3	16	--	--	--	--	--	--	1	2	--	--	--	--	2	23
Vocational Survey	14	30	--	--	--	--	2	42	--	--	--	--	4	33	8	26
Woodwork 1 & 2	49	30	16	31	9	32	6	33	6	29	6	27	3	27	3	21
Woodwork 3 & 4	20	22	5	24	4	21	3	25	3	23	1	20	2	27	2	11
Woodwork 5 & 6	5	10	--	--	1	4	1	9	1	9	--	--	--	--	2	13
Woodwork 7 & 8	1	3	--	--	1	3	--	--	--	--	--	--	--	--	--	--
1100	3	23	--	--	--	--	--	--	--	--	--	--	3	23	--	--
1164	1	29	--	--	--	--	--	--	--	--	1	29	--	--	--	--
1190	1	22	--	--	1	22	--	--	--	--	--	--	--	--	--	--

Source: Department of Education.

Note: The following courses had no classes covered by this table:

Agriculture - Landscape, live science, part-time coop

Business Education - Advertising, salesmanship

Industrial Arts - Auto maintenance, home mech. 3 & 4, printing 7 & 8

Table 15

AVERAGE CLASS SIZES OF VOCATIONAL COURSES IN HAWAII SECONDARY SCHOOLS BY SCHOOLS IN EACH DISTRICT FALL 1964

	Total		Vocational Classes by Program							
			Agriculture		Business Education		Home Economics		Industrial Arts	
District and School[a]	No. of Classes	Average Size	No.	Size	No.	Size	No.	Size	No.	Size
STATE	2,029	28	214	23	704	31	421	29	690	26
Honolulu	669	30	21	29	249	33	155	28	244	27
Central Oahu	298	30	27	25	128	32	54	33	89	27
Leeward Oahu	223	29	29	27	74	30	53	31	67	28
Windward Oahu	261	28	27	26	75	32	51	30	108	25
Hawaii	269	26	52	19	81	30	55	26	81	26
Kauai	103	26	17	22	33	28	19	28	34	25
Maui	206	22	41	19	64	26	34	22	67	19
HONOLULU	669	30	21	29	249	33	155	28	244	27
Central	21	22	-	-	6	27	6	22	9	19
Dole	29	29	3	26	6	32	9	28	11	29
Farrington	129	31	1	37	61	34	13	34	54	27
Jarrett	27	29	-	-	11	28	8	31	8	30
Kaimuki High	74	32	2	34	39	33	10	31	23	29
Kaimuki Int.	47	28	4	32	12	35	19	22	12	29
Kalakaua	39	30	3	26	12	35	14	27	10	27
Kalani	61	27	1	29	26	32	9	26	25	23
Kawananakoa	27	31	2	31	6	39	8	27	11	29
McKinley	80	30	3	26	24	32	20	36	33	26
Niu Valley	19	30	-	-	8	29	6	33	5	30
Roosevelt	53	28	2	30	21	32	10	23	20	27
Stevenson	35	26	-	-	12	26	12	24	11	29
Washington	28	33	-	-	5	45	11	28	12	33
CENTRAL OAHU	298	30	27	25	128	32	54	33	89	27
Aiea High	54	31	1	37	22	32	11	34	20	27
Aiea Int.	22	27	5	21	5	34	6	33	6	21
Aliamanu	24	34	-	-	6	36	9	33	9	34
Leilehua	77	30	7	27	43	32	5	38	22	25
Radford	59	31	2	25	33	33	8	33	16	27
Wahiawa Int.	28	27	4	22	6	30	10	29	8	24
Waialua High-Int.	34	29	8	24	13	31	5	31	8	29
LEEWARD OAHU	223	29	29	27	74	30	53	31	67	28
Campbell	43	31	-	-	18	31	9	31	16	31
Ewa El.-Int.	8	26	2	26	2	30	2	22	2	26
Highlands	26	29	5	32	6	32	10	28	5	25
Nanaikapono	16	33	2	33	6	28	5	34	3	39
Waianae High-Int.	70	28	15	26	18	31	12	34	25	25
Waipahu High	60	29	5	27	24	30	15	30	16	29
WINDWARD OAHU	261	28	27	26	75	32	51	30	108	25
Castle	78	28	8	26	24	31	14	31	32	26
Kahuku High-El.	33	22	8	23	9	26	5	28	11	17
Kailua High	86	29	5	31	30	32	12	35	39	24
Kailua Int.	36	33	-	-	12	37	12	30	12	30
Waiahole	14	21	2	27	-	-	4	17	8	23
Waimanalo	14	26	4	27	-	-	4	27	6	25

Table 15 (continued)

District and School[a]	Total: No. of Classes	Total: Average Size	Vocational Classes by Program: Agriculture		Business Education		Home Economics		Industrial Arts	
			No.	Size	No.	Size	No.	Size	No.	Size
HAWAII	269	26	52	19	81	30	55	26	81	26
Hilo High	75	32	7	27	25	39	11	32	32	28
Hilo Int.	18	35	-	-	6	39	6	33	6	33
Honokaa	25	24	7	22	6	32	6	21	6	23
Kalanianaole	14	30	3	31	4	31	4	26	3	34
Kau	19	19	6	20	6	14	3	22	4	22
Keeau	1	27	-	-	-	-	1	27	-	-
Kohala	26	17	8	11	8	21	4	25	6	13
Kona	40	28	6	20	13	35	7	26	14	27
Laupahoehoe	18	20	4	16	5	25	3	21	6	17
Mountain View	2	18	1	15	-	-	1	20	-	-
Naalehu	1	23	1	23	-	-	-	-	-	-
Paauilo	2	13	1	11	-	-	1	15	-	-
Pahoa	14	12	5	11	5	13	3	9	1	16
Waiakea	12	33	2	37	3	32	4	33	3	31
Waimea	2	16	1	12	-	-	1	19	-	-
KAUAI	103	26	17	22	33	28	19	28	34	25
Eleele	2	31	2	31	-	-	-	-	-	-
Kapaa	35	23	5	23	10	27	6	28	14	17
Kauai	33	26	5	21	12	26	7	30	9	24
Waimea	33	27	5	17	11	31	6	25	11	28
MAUI	206	22	41	19	64	26	34	22	67	19
Baldwin	63	28	11	22	22	34	9	28	21	24
Hana	12	16	2	15	4	14	4	16	2	22
Kamehameha III	3	33	-	-	-	-	-	-	3	33
Kilohana	10	7	2	9	4	7	1	6	3	5
Lahainaluna	41	17	8	17	8	27	3	31	22	12
Lanai	20	18	5	18	8	16	4	19	3	22
Maui	34	27	6	25	11	32	8	23	9	26
Molokai	23	18	7	17	7	21	5	14	4	20

Source: Department of Education.

[a] The following schools which include the 7th, 8th and/or 9th grades do not offer any vocational courses:

Leeward Oahu - Ahrens, Waianae El., Waipahu El.

Windward Oahu - Hauula, King, Laie

Hawaii - Holualoa, Honaunau, Honokohau, Hookena, Kawaihae, Milolii

Kauai - Anahola, Hanalei, Kalaheo, Kaumakani, Kekaha, Kilauea, Koloa, Niihau, Wilcox

Maui - Haiku, Honokohua, Iao, Kahului, Kaunakakai, Kaunoa, Keanae, Kihei, Kula, Lihikai, Makawao, Maunaloa, Paia, Puunene, Waihee

Table 16

NUMBER OF VOCATIONAL CLASSES IN HAWAII SECONDARY SCHOOLS WITH 5 OR LESS STUDENTS, 6-15 STUDENTS, 16-25 STUDENTS, 26-35 STUDENTS, AND 36 OR MORE STUDENTS
FALL 1964

Vocational Program and No. of Students Per Class	State Classes		Honolulu Classes		Central Oahu Classes		Leeward Oahu Classes		Windward Oahu Classes		Hawaii Classes		Kauai Classes		Maui Classes	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
ALL PROGRAMS	2029	100	669	100	298	100	223	100	261	100	269	100	103	100	206	100
5 or less	46	2	10	2	3	1	2	1	9	4	6	2	3	3	13	6
6-15	163	8	26	4	8	3	15	7	17	7	41	15	12	12	44	21
16-25	462	23	125	19	60	20	44	20	58	22	73	27	33	32	69	34
26-35	969	48	366	55	156	52	109	49	126	48	111	41	42	41	59	29
36 or more	389	19	142	21	71	24	53	24	51	20	38	14	13	13	21	10
AGRICULTURE	214	100	21	100	27	100	29	100	27	100	52	100	17	100	41	100
5 or less	7	3	--	--	1	4	--	--	1	4	3	6	1	6	1	3
6-15	37	17	--	--	3	11	5	17	1	4	11	21	4	24	13	32
16-25	82	38	6	29	11	41	5	17	10	37	25	48	7	41	18	44
26-35	69	32	12	57	9	33	12	41	13	48	11	21	4	24	8	20
36 or more	19	9	3	14	3	11	7	24	2	7	2	4	1	6	1	2
BUSINESS EDUCATION	704	100	249	100	128	100	74	100	75	100	81	100	33	100	64	100
5 or less	3	0	--	--	--	--	--	--	--	--	--	--	1	3	2	3
6-15	38	5	3	1	--	--	3	4	5	7	16	20	1	3	10	16
16-25	94	13	26	11	17	13	12	16	7	9	9	11	11	33	12	19
26-35	345	49	132	53	75	59	41	55	31	41	32	40	11	33	23	36
36 or more	224	32	88	35	36	28	18	24	32	43	24	30	9	27	17	27
HOME ECONOMICS	421	100	155	100	54	100	53	100	51	100	55	100	19	100	34	100
5 or less																
6-15	25	6	7	5	--	--	1	2	2	4	5	9	1	5	9	27
16-25	105	25	42	27	6	11	12	23	9	18	20	36	5	26	11	32
26-35	207	49	77	50	29	54	26	49	29	57	23	42	10	53	13	38
36 or more	84	20	29	19	19	35	14	26	11	22	7	13	3	16	1	3
INDUSTRIAL ARTS	690	100	244	100	89	100	67	100	108	100	81	100	34	100	67	100
5 or less	36	5	10	4	2	2	2	3	8	7	3	4	1	3	10	15
6-15	63	9	16	7	5	6	6	9	9	8	9	11	6	18	12	18
16-25	181	26	51	21	26	29	15	22	32	30	19	23	10	29	28	42
26-35	348	51	145	59	43	48	30	45	53	49	45	56	17	50	15	22
36 or more	62	9	22	9	13	15	14	21	6	6	5	6			2	3

Source: Department of Education.

Note: Percentages may not add to 100 due to rounding.

Table 17

SECONDARY VOCATIONAL PROGRAM EXPENDITURES
1960-61 TO 1964-65

	Expenditures				Adjusted Appropriation 1964-65
	Estimated 1960-61	Actual 1961-62	Actual 1962-63	Actual 1963-64	
SECONDARY VOCATIONAL PROGRAM: TOTAL	$2,653,893(393)	$2,368,192(409)	$2,693,088(425)	$3,010,836(430)	$3,311,772(430)
General Direction	40,750(5)	33,859(3)	27,633(3)	30,479(3)	28,463(3)
Agriculture	598,491(64)	530,688(66)	589,873(66)	609,907(69)	622,302(69)
Business	754,628(128)	647,616(133)	726,576(136)	834,770(133)	966,535(133)
Home Economics	591,584(90)	523,259(95)	577,574(101)	617,974(94)	704,811(94)
Industrial Arts	668,440(106)	632,770(112)	771,432(119)	917,706(131)	989,661(131)
SECONDARY VOCATIONAL PROGRAM BY CHARACTER OF EXPENDITURE: TOTAL	$2,653,893(393)	$2,368,192(409)	$2,693,088(425)	$3,010,836(430)	$3,311,772(430)
Personal Services	2,311,107(393)	2,098,373(409)	2,384,536(425)	2,604,171(430)	2,842,438(430)
Other Current Expenses	99,445	110,609	116,971	228,541	243,178
Equipment	168,333	149,256	190,704	178,124	226,156
Motor Vehicles	75,008	9,954	877	--	--
ADMINISTRATION OF VOCATIONAL PROGRAMS: SUBTOTAL	$ 202,378(21)	$ 170,373(16)	$ 167,357(16)	$ 183,877(18)	$ 176,587(18)
General Direction	40,750(5)	33,859(3)	27,633(3)	30,479(3)	28,463(3)
Agriculture	40,669(5)	36,734(4)	37,438(4)	41,442(5)	41,288(5)
Business	30,138(3)	20,634(2)	18,773(2)	18,773(2)	29,303(3)
Home Economics	73,134(6)	60,663(5)	65,401(5)	63,730(5)	61,752(5)
Industrial Arts	17,687(2)	18,483(2)	18,112(2)	18,923(2)	18,623(2)
INSTRUCTIONAL AND SCHOOL SERVICES: SUBTOTAL	$2,451,515(372)	$2,197,819(393)	$2,525,731(409)	$2,826,959(412)	$3,135,185(412)
Agriculture	557,822(59)	493,954(62)	552,435(62)	568,465(64)	581,014(64)
Business	724,490(125)	626,982(131)	707,803(134)	805,467(130)	940,074(130)
Home Economics	518,450(84)	462,596(90)	512,173(96)	554,244(89)	643,059(89)
Industrial Arts	650,753(104)	614,287(110)	753,320(117)	898,783(129)	971,038(129)
FUNDING: TOTAL	$2,653,893(393)	$2,368,192(409)	$2,693,088(425)	$3,010,836(430)	$3,311,772(430)
General Fund	2,543,190(377)	2,263,541(397)	2,584,566(413)	2,906,911(419)	3,212,282(419)
Federal Fund	110,703(16)	104,651(12)	108,522(12)	103,925(11)	99,490(11)

Source: Compiled from budget data from the Business Office, Department of Education.

Table 18

POST-SECONDARY VOCATIONAL AND TECHNICAL TRAINING EXPENDITURES
1960-61 TO 1964-65

Program, Character of Expenditure and Funding	Expenditures				Adjusted
	Estimated 1960-61	Actual 1961-62	Actual 1962-63	Actual 1963-64	Appropriation 1964-65
POST-SECONDARY AND TECHNICAL TRAINING PROGRAM: TOTAL	$1,087,277(120)	$1,081,205(120)	$1,137,730(126)	$1,134,472(126)	$1,234,086(136)
State Office Supervision	22,551(2)	23,301(2)	25,435(2)	19,724(2)	21,179(2)
School Administration	88,336(13)	90,937(13)	97,395(14)	99,041(14)	96,731(13)
Technical School-Day	718,704(86)	720,785(86)	785,720(91)	787,362(95)	888,392(105)
Counseling	7,574(1)	8,453(1)	8,843(1)	9,758(1)	9,758(1)
Technical School-Night	81,345(3)	87,191(3)	74,047(3)	67,698(3)	73,256(3)
Distributive Instruction	29,388(4)	30,028(4)	30,590(4)	--[a]	--[a]
Apprenticeship Training	36,735(5)	39,049(5)	27,323(5)	41,820(5)	41,820(5)
Plant Operation and Maintenance	102,644(6)	81,461(6)	88,377(6)	109,069(6)	102,950(7)
POST-SECONDARY AND TECHNICAL TRAINING PROGRAM BY CHARACTER OF EXPENDITURE: TOTAL	$1,087,277(120)	$1,081,205(120)	$1,137,730(126)	$1,134,472(126)	$1,234,086(136)
Personal Services	911,951(120)	942,276(120)	1,004,528(126)	1,027,214(126)	1,126,727(136)
Other Current Expenses	102,326	74,477	79,888	92,828	90,874
Equipment	73,000	64,452	53,314	14,430	16,485
FUNDING: TOTAL	$1,087,277(120)	$1,081,205(120)	$1,137,730(126)	$1,134,472(126)	$1,234,086(136)
General Fund	996,760(119)	1,012,678(119)	1,039,604(125)	1,044,736(125)	1,138,849(135)
Federal Fund	90,517(1)	68,527(1)	98,126(1)	89,736(1)	95,237(1)

Source: Compiled from budget data from the Business Office, Department of Education.

[a] Program discontinued due to lack of matching funds.

Table 19

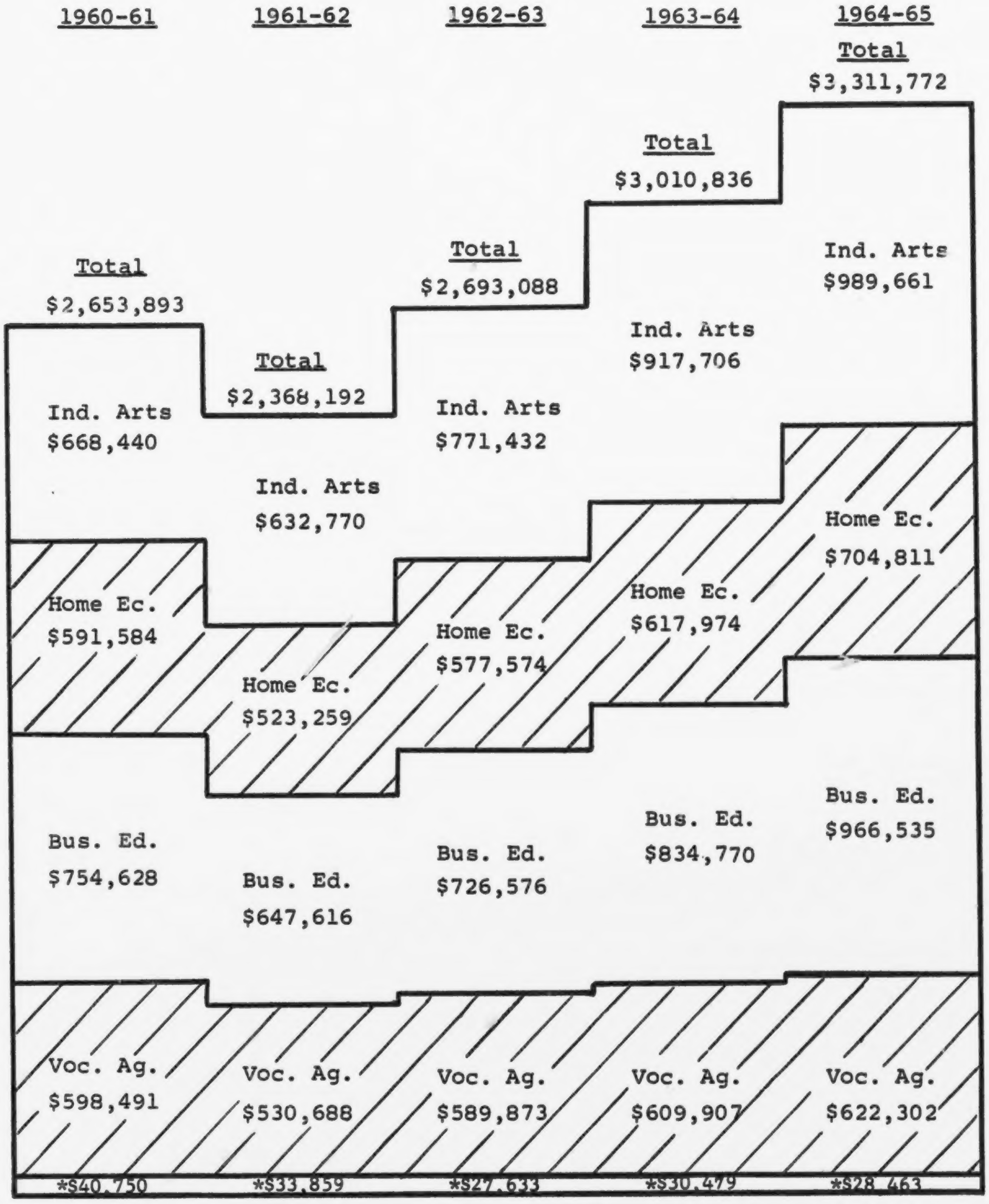
HAWAII APPRENTICE REGISTRATIONS, CANCELLATIONS, COMPLETIONS AND ENROLLMENT BY TRADE
1963-1964

Trade	Enrollment Data					
	Registrants as of June 30, 1963	New Registrations	Resumptions	Cancellations	Completions	Registrants as of June 30, 1964
GRAND TOTAL	911	472	46	367	142	920
CONSTRUCTION TRADES	780	422	45	330	114	803
Bricklayer-Mason	9	5	0	2	1	11
Carpenter	197	169	17	158	20	205
Cement Finisher	9	7	1	7	3	7
Electrician (Wireman)	145	40	11	22	29	145
Ironworker (Fabricator)	0	25	0	4	0	21
Ironworker (Reinforcing)	27	4	0	10	4	17
Ironworker (Structural)	23	11	0	18	1	15
Lather	4	0	2	1	2	3
Painter	61	71	3	44	5	86
Plasterer	18	0	0	2	4	12
Plumber	154	53	5	32	27	153
Refrigeration (Pipefitter)	37	15	1	9	5	39
Sheetmetal Worker	94	21	5	19	12	89
Tilesetter	2	1	0	2	1	0
OTHER TRADES	131	50	1	37	28	117
Appliance and Radio-TV Repairman	5	5	0	1	0	9
Automotive and Diesel Trades	5	9	0	1	0	13
Baker	0	1	0	1	0	0
Boilermaker	4	0	0	1	0	3
Draftsman	15	0	0	1	6	8
Electrical (Utilities)	44	19	0	3	15	45
Electrician (Motor Repairer and Rewinder)	15	5	0	7	1	12
Electronics Technician (Sound)	4	0	0	4	0	0
Furniture Finisher and Repairman	0	1	0	1	0	0
Instrument Technician	2	0	0	0	0	2
Machinist (Maintenance Mechanic)	10	3	0	1	2	10
Meat Cutter	0	1	0	0	0	1
Mechanic (Maintenance)	7	1	0	1	3	4
Millwright	1	0	0	0	0	1
Molder	3	0	1	2	0	2
Musical Instrument Mechanic	0	1	0	0	0	1
Painter (Maintenance)	1	0	0	0	0	1
Patternmaker	1	0	0	0	0	1
Printing Industry	13	4	0	13	0	4
Sheetmetal (Plant)	1	0	0	0	1	0

Source: Department of Labor and Industrial Relations.

Chart 1

SECONDARY VOCATIONAL EDUCATION PROGRAM EXPENDITURES 1960-1965

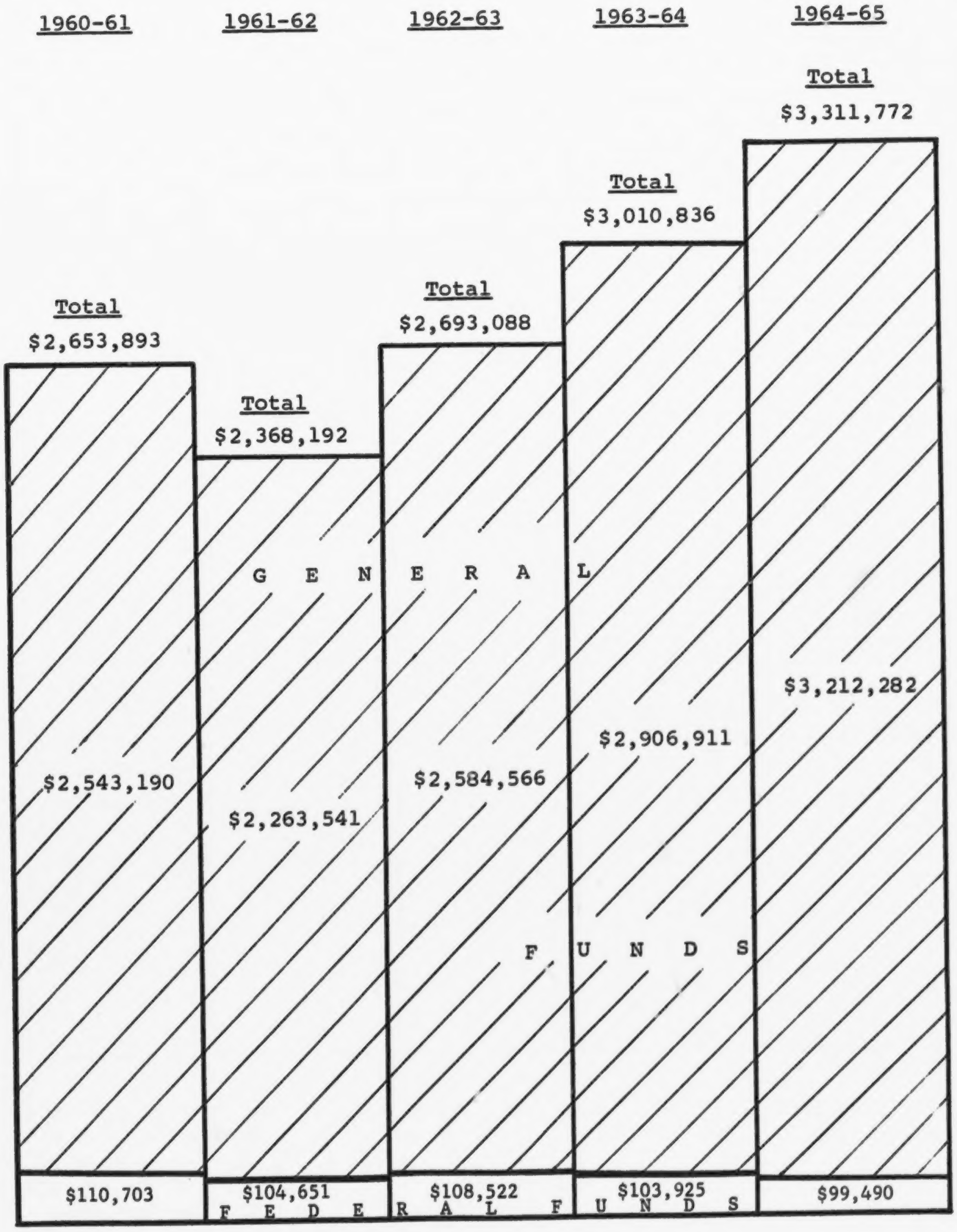


*General direction.

Source: Compiled from the records of the Department of Education.

Chart 2

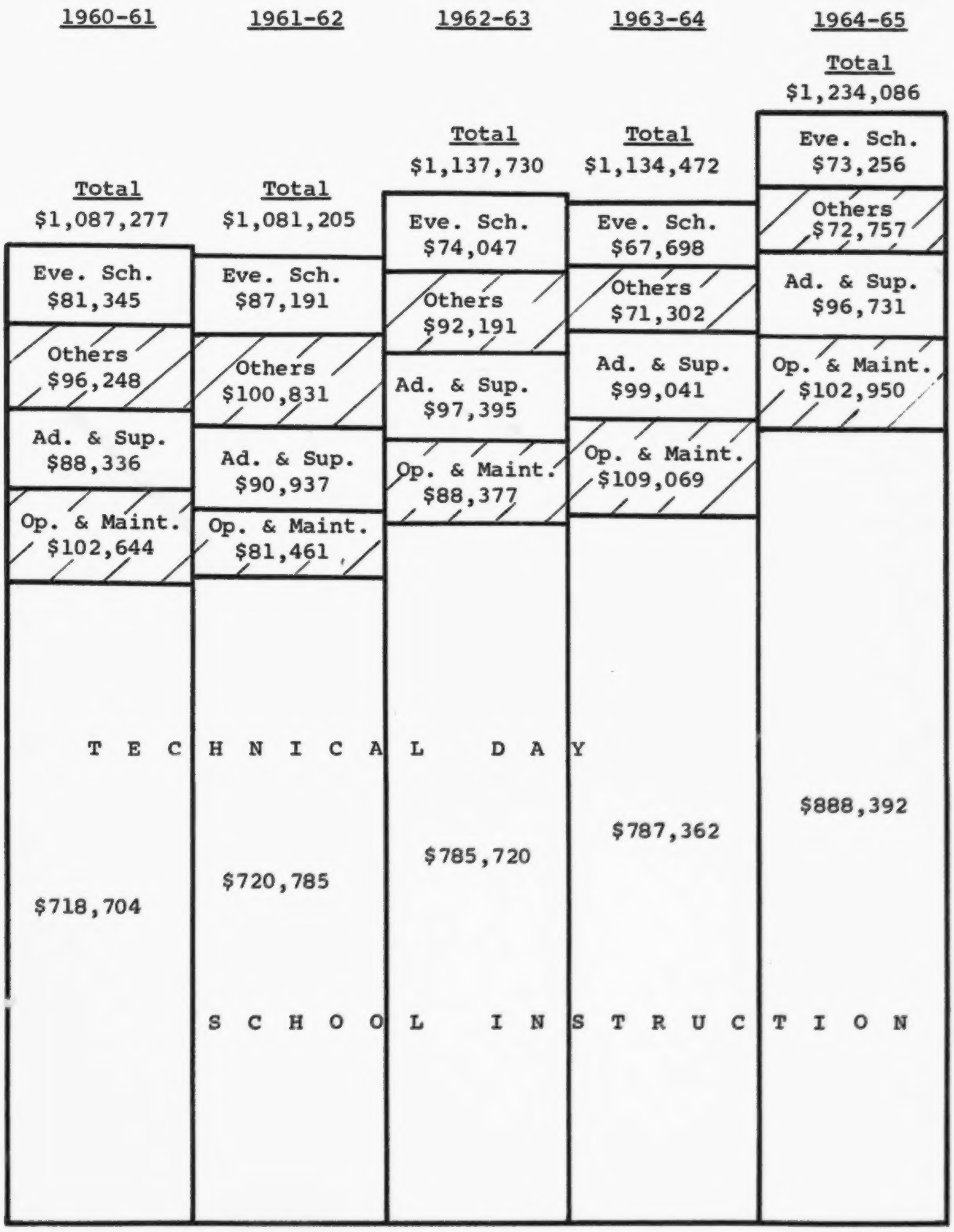
FUNDING OF SECONDARY VOCATIONAL EDUCATION PROGRAMS
1960-1965



Source: Compiled from the records of the Department of Education.

Chart 3

POST-SECONDARY TECHNICAL EDUCATION EXPENDITURES
1960-1965

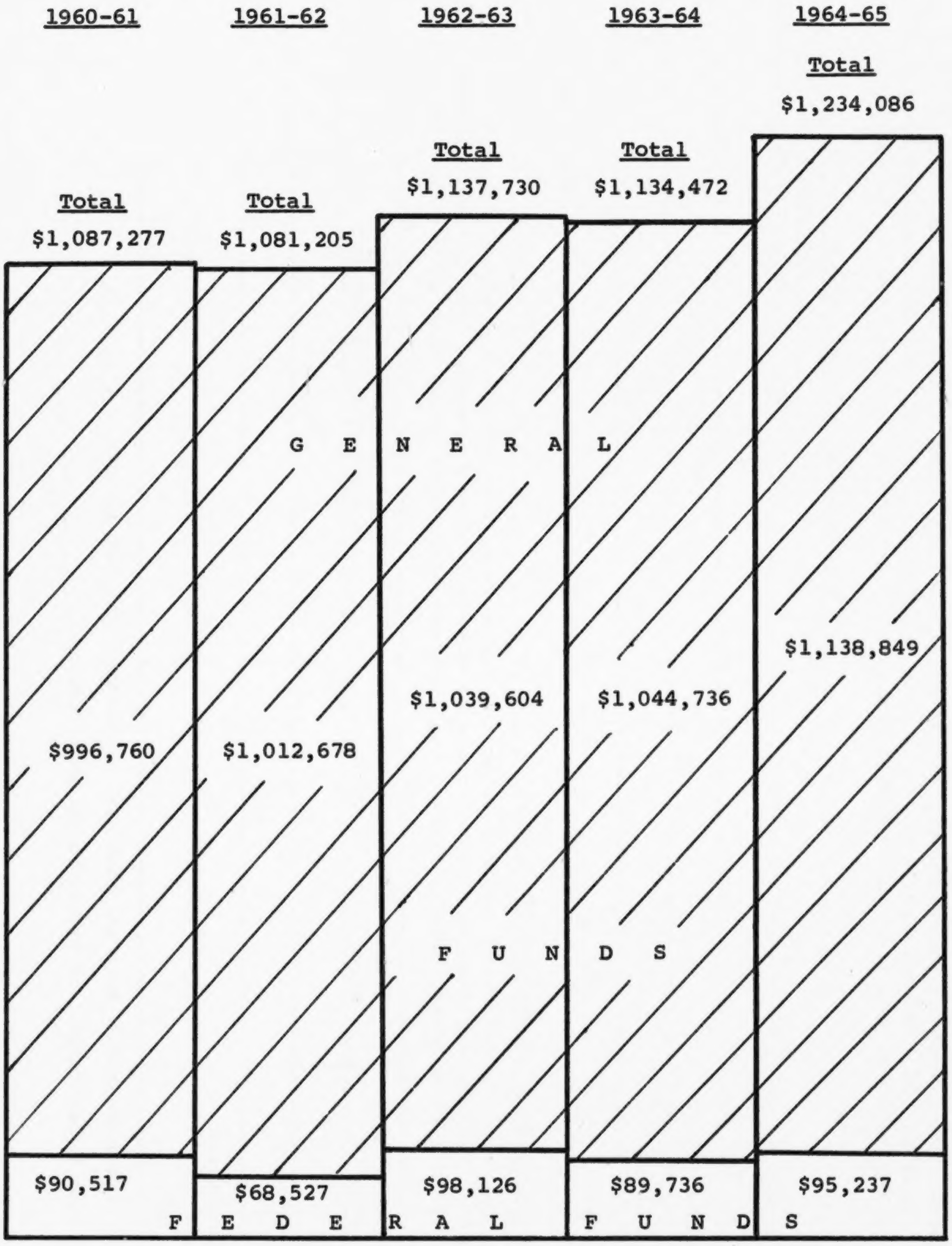


Source: Compiled from the records of the Department of Education.

Note: Eve. Sch. - Evening School Instruction
Others - (1) Trade and Industry, (2) Apprenticeship Training, (3) Distributive Instruction, (4) Counseling
Ad. & Sup. - Administration and Supervision
Op. & Maint. - Plant Operation and Maintenance

Chart 4

FUNDING OF POST-SECONDARY EDUCATION
1960-1965



Source: Compiled from the records of the Department of Education.

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APPENDIX B

QUESTIONNAIRE I
DATA ON VOCATIONAL TEACHERS AND VOCATIONAL COURSES
(To Be Completed By School Administrators)

1. The Educational Background of Vocational Teachers

Please complete the following table showing the educational background of all vocational teachers at the school this year (1964-65). Include all teachers teaching one or more vocational courses. For teachers teaching in more than one vocational field (for example, home economics and business education) count them in each category in which they teach courses.

Subject Taught	Total in School	Number With College Degree				Number With No Degree
		B. A. Only		Advanced Degree		
		Major in Subject	Major in Other Field	Major in Subject	Major in Other Field	
(1) Agriculture						
(2) Home Economics						
(3) Business Education						
(4) Industrial Arts						

2. The Trade Experience of Vocational Teachers

a. Please complete the following table showing the trade experience of all vocational teachers at the school this year (1964-65). Include all teachers teaching one or more vocational courses. For teachers teaching in more than one vocational field (for example, home economics and business education) count them in each category in which they teach courses.

Subject Taught	Number with no trade experience in subject	Number with up to two years trade experience in subject	Number with more than two years experience in subject
(1) Agriculture			
(2) Home Economics			
(3) Business Education			
(4) Industrial Arts			

b. How many teachers teach in more than one vocational subject field? __________

c. What is the total number of teachers in your school? __________

3. 1963-64 School Year Vocational Course Offerings

a. Please indicate for the school year 1963-1964 for each course title the number of classes offered, whether the course was a year or semester course, the total number of students enrolled in the classes, the number of periods per week that each class meets, and the amount of credit each class carries. Please indicate with a check mark whether each course if offered primarily (1) as a part of the general education program to help students explore their vocational interests, or (2) to prepare students for post-secondary vocational trade or technical training, or (3) to prepare students for taking jobs after graduation from high school. If one course is intended to serve more than one purpose check all appropriate columns.

Course Title	Number of classes offered	Year or semester course	Total number of students enrolled	Number of periods per week that class meets	Amount of credit the class carries (1 credit equals 120 class hours per school year)	The Course is Offered Primarily as: (Check as many columns as apply)		
						General education - Explore vocational interests	Preparation for post-secondary vocational trade or technical training	Preparation for immediate employment
Agriculture (1) Agricultural Arts								
(2) Floriculture								
(3) Horticulture								
(4) Landscape Design								
(5) Vocational Agriculture 1 & 2								
(6) Vocational Agriculture 3 & 4								
(7) Vocational Agriculture 5 & 6								
(8) Practical Arts								
(9) Part Time Coop. Program								
(10) Farm Management								
Other Agriculture (Please specify) (1) ______								
(2) ______								
(3) ______								

Course Title	Number of classes offered	Year or semester course	Total number of students enrolled	Number of periods per week that class meets	Amount of credit the class carries (1 credit equals 120 class hours per school year)	The Course is Offered Primarily as: (Check as many columns as apply)		
						General education - Explore vocational interests	Preparation for post-secondary vocational trade or technical training	Preparation for immediate employment
Business Education								
(1) Advertising								
(2) Bookkeeping 1 & 2								
(3) Bookkeeping 3 & 4								
(4) Business English								
(5) Business General								
(6) Business Law								
(7) Business Machines								
(8) Business Mathematics								
(9) Clerical Practice								
(10) COE (formerly COT)								
(11) Cooperative Distributive Educ.								
(12) Data Processing								
(13) Economics								
(14) Notehand								
(15) Office Practice								
(16) Record Keeping								
(17) Salesmanship								
(18) Shorthand 1 & 2								
(19) Shorthand 3 & 4								

Course Title	Number of classes offered	Year or semester course	Total number of students enrolled	Number of periods per week that class meets	Amount of credit the class carries (1 credit equals 120 class hours per school year)	The Course is Offered Primarily as: (Check as many columns as apply)		
						General education - Explore vocational interests	Preparation for post-secondary vocational trade or technical training	Preparation for immediate employment
(20) Typing 1 & 2								
(21) Typing 3 & 4								
(22) Typing 5 & 6								
(23) Typing, Personal								
(24) Typograph 1 & 2								
(25) Typograph 3 & 4								
Other Business Education (Please specify) (1)								
(2)								
(3)								
Home Economics (1) Homemaking, Gr. 8								
(2) Homemaking I								
(3) Homemaking II								
(4) Homemaking III								
(5) Clothing Appreciation								
(6) Family Clothing								
(7) Family Foods								
(8) Home Management								
(9) Home Nursing								

Course Title	Number of classes offered	Year or semester course	Total number of students enrolled	Number of periods per week that class meets	Amount of credit the class carries (1 credit equals 120 class hours per school year)	The Course is Offered Primarily as: (Check as many columns as apply)		
						General education - Explore vocational interests	Preparation for post-secondary vocational trade or technical training	Preparation for immediate employment
(10) Family Living								
(11) Personality and Dress								
Other Home Economics (Please specify) (1)								
(2)								
(3)								
Industrial Arts (1) Automotive Mechanics 1 & 2								
(2) Automotive Mechanics 3 & 4								
(3) Automotive Mechanics 5 & 6								
(4) Automotive Maintenance								
(5) Cooperative Industrial Arts Training								
(6) Drafting, Architectural 1 & 2								
(7) Drafting, Architectural 3 & 4								
(8) Drawing, Engineering 1 & 2								
(9) Drawing, Engineering 3 & 4								
(10) Drawing, Mechanical 1 & 2								
(11) Drawing, Mechanical 3 & 4								
(12) Drawing, Mechanical 5 & 6								

Course Title	Number of classes offered	Year or semester course	Total number of students enrolled	Number of periods per week that class meets	Amount of credit the class carries (1 credit equals 120 class hours per school year)	The Course is Offered Primarily as: (Check as many columns as apply)		
						General education - Explore vocational interests	Preparation for post-secondary vocational trade or technical training	Preparation for immediate employment
(13) Electricity 1 & 2								
(14) Electricity 3 & 4								
(15) Electricity 5 & 6								
(16) Electronics 1 & 2								
(17) Electronics 3 & 4								
(18) Electronics 5 & 6								
(19) Home Mechanics 1 & 2								
(20) Home Mechanics 3 & 4								
(21) Industrial Crafts 1 & 2								
(22) Industrial Crafts 3 & 4								
(23) Metals, General 1 & 2								
(24) Metals, General 3 & 4								
(25) Metals, General 5 & 6								
(26) Printing 1 & 2								
(27) Printing 3 & 4								
(28) Printing 5 & 6								
(29) Printing 7 & 8								
(30) General Shop								
(31) Shop, General 1 & 2								
(32) Shop, General 3 & 4								
(33) Shop, General 5 & 6								

Course Title	Number of classes offered	Year or semester course	Total number of students enrolled	Number of periods per week that class meets	Amount of credit the class carries (1 credit equals 120 class hours per school year)	The Course is Offered Primarily as: (Check as many columns as apply)		
						General education - Explore vocational interests	Preparation for post-secondary vocational trade or technical training	Preparation for immediate employment
(34) Woodwork 1 & 2								
(35) Woodwork 3 & 4								
(36) Woodwork 5 & 6								
(37) Woodwork 7 & 8								
(38) Vocational Survey								
Other Industrial Arts (Please specify) (1)								
(2)								
(3)								

b. What was the total number of students enrolled in the school in 1963-64 school year? __________

c. What was the total number of classes (including vocational and non-vocational) offered for one semester at the school in 1963-64? __________

d. What was the total amount of credit courses offered for only one semester carried in 1963-64? (1 credit is equal to 120 class hours per school year) __________

e. What was the total number of classes (including vocational and non-vocational) offered for one year at the school in 1963-64? __________

f. What was the total amount of credit courses offered for one year carried in 1963-64? (1 credit is equal to 120 class hours per school year) __________

g. How long was the average period in 1963-64? __________ minutes.
How many class periods were scheduled per day in 1963-64? __________ class periods per day.

4. Total vocational courses taken by 1964-65 seniors during their secondary school career.

Please indicate for all seniors now in your school the number of vocational courses they have taken during their secondary school career including any vocational courses they are taking at this time (1964 fall semester). For example, if John Doe, a senior at the school this fall is taking 1 vocational course this semester and took 2 vocational courses as a junior, 1 as a sophomore and none as a freshman he would be included in the total entered on line 5 of all seniors having taken four vocational courses. Vocational courses are all courses offered in agriculture, business education, home economics and industrial arts.

Number of vocational courses taken including vocational courses in which they are presently enrolled	Number of Seniors
(1) No courses taken	
(2) One	
(3) Two	
(4) Three	
(5) Four	
(6) Five	
(7) Six or more	
(8) Total no. of seniors	

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APPENDIX C

VOCATIONAL EDUCATION INTERVIEW OUTLINE

(Questions for LRB interviews with secondary principals,
registrars, counselors and vocational teachers)

1. When is the student's curriculum (or courses that he will take while in high school) first tentatively planned?

2. What is the process for individual curriculum review and change?

3. Who discusses curriculum choices with students?

4. What part do homeroom teachers have in curriculum planning for students?

5. List in order of importance the factors taken into account in planning the student's curriculum (number them in order of importance, the most important first).

6. Does the school offer programs, among which students can choose, that are intended to prepare the student for particular occupations or particular post-high school educational programs? ___Yes ___No If so, please indicate the general content of each such program and its objectives.

7. If there are no programs among which students can choose, on what bases are the courses the student will take in high school planned?

8. Are the vocational goals of students taken into account in planning his high school work, assuming that the child's stated vocational goals are compatible with his abilities? ___Yes ___No If so, explain the way in which vocational goals determine the course work.

9. If the student has stated that he has vocational goals which are incompatible with his abilities, what is done?

10. What materials on occupational possibilities are used in this school for counseling students on their course programs?

11. What liaison does your school maintain with the Technical Schools in Hawaii?

12. What liaison does your school maintain with industry in Hawaii?

13. Ideally speaking, what kind of high school program would you recommend for a student who planned to take a post-high school technical training program offered by a junior or community college, a technical institute on the mainland or by an industry? List the essential courses in each subject area which you would recommend.

    a. Language Arts
    b. Social Studies
    c. Mathematics
    d. Science
    e. Languages
    f. Business Education
    g. Agriculture
    h. Industrial Arts
    i. Home Economics
    j. Art
    k. Music
    l. Speech
    m. Miscellaneous

14. Ideally speaking, what kind of high school program would you recommend for a student who will take a post-high school trade school course such as those now offered by the Hawaii technical schools? List the essential courses in each subject area which you would recommend.

    a. Language Arts
    b. Social Studies
    c. Mathematics
    d. Science
    e. Languages
    f. Business Education
    g. Agriculture
    h. Industrial Arts
    i. Home Economics
    j. Art
    k. Music
    l. Speech
    m. Miscellaneous

15. Ideally speaking, what kind of high school program would you recommend for a student who will take no post-high school education or training? List the essential courses in each subject area which you would recommend.

    a. Language Arts
    b. Social Studies
    c. Mathematics
    d. Science
    e. Languages
    f. Business Education
    g. Agriculture
    h. Industrial Arts
    i. Home Economics
    j. Art
    k. Music
    l. Speech
    m. Miscellaneous

APPENDIX C (continued)

16. Based on the actual present course offerings of your school, what courses would you recommend for a student who planned to take a post-high school technical training program offered by a junior or community college, a technical institute on the mainland or by an industry? List the courses in each subject area which you would recommend.

    a. Language Arts
    b. Social Studies
    c. Mathematics
    d. Science
    e. Languages
    f. Business Education
    g. Agriculture
    h. Industrial Arts
    i. Home Economics
    j. Art
    k. Music
    l. Speech
    m. Miscellaneous

17. Based on the actual present course offerings of your school, what courses would you recommend for a student who will take a post-high school trade school course such as those now offered by the Hawaii technical schools? List the essential courses in each subject area which you would recommend.

    a. Language Arts
    b. Social Studies
    c. Mathematics
    d. Science
    e. Languages
    f. Business Education
    g. Agriculture
    h. Industrial Arts
    i. Home Economics
    j. Art
    k. Music
    l. Speech
    m. Miscellaneous

18. Based on the actual present course offerings of your school, what courses would you recommend for a student who will take no post-high school education or training? List the essential courses in each subject area which you would recommend.

    a. Language Arts
    b. Social Studies
    c. Mathematics
    d. Science
    e. Languages
    f. Business Education
    g. Agriculture
    h. Industrial Arts
    i. Home Economics
    j. Art
    k. Music
    l. Speech
    m. Miscellaneous

19. What changes in the vocational education curriculums at the high school level would you recommend for Hawaii?

20. Do you feel that there should be more or less emphasis on vocational courses at the high school level in Hawaii? ____More ____Less Explain your answer.

The following questions are for counselors only:

1. How many students are you assigned to counsel? ________________

2. Approximately how many of the students you are assigned to counsel fall into each of the following categories:

    a. Students taking a college preparatory program ________________
    b. " " " technical program ________________
    c. " " " business " ________________
    d. " " " terminal " ________________
    e. " " another program than the above (please specify the program) ________________

3. What per cent of your time during regular school hours do you estimate that you spend on the following activities:

    a. Counseling students ________%
    b. " " in college preparatory programs ________%
    c. " " " technical programs ________%
    d. " " " business " ________%
    e. " " " terminal " ________%

4. Approximately how many students who will probably go on to college do you counsel individually during the school year? ____________

5. Approximately how many students who will probably not go on to college do you counsel individually during the school year? ___________

APPENDIX D

TECHNICAL SCHOOL STUDENT SURVEY
(Questionnaire form modified slightly
to show responses)
1964

Instructions For Completing Questionnaire

Please read every question carefully and completely before answering. Answer every question. Some questions have more than one part and you may need to answer only the first part. Most questions can be answered by a checkmark. Some questions require a written answer and it will be helpful if you will take the time to write out your answer.

Please note that you are not asked to identify yourself. No one will be able to tell which questionnaire is yours.

Thank you very much for your help.

1. Check the highest grade you completed in elementary or secondary school:

Per Cent		
	(1) ___	Grade 6 or less
	(2) ___	Grade 7
1	(3) 1	Grade 8
	(4) ___	Grade 9
5	(5) 5	Grade 10
1	(6) 1	Grade 11
94	(7) 102	Grade 12

2. What program of courses did you take in high school? (Check one)

Per Cent		
4	(1) 4	Did not go far enough in high school to have a program
29	(2) 32	College preparatory (general or scientific)
38	(3) 41	Technical
25	(4) 27	Business
5	(5) 5	Terminal

3. What other courses in addition to your technical school program have you completed since leaving high school?

Per Cent		
80	(1) 87 of 109	No other courses
13	(2) 6 of 46	Trade related courses
24	(3) 11	Unrelated trade courses
15	(4) 7	General education
2	(5) 1	Amusement courses (avocational)
4	(6) 2	Night school or adult evening school
0	(7) 0	Junior college
15	(8) 7	College
11	(9) 5	Technical or trade school
7	(10) 3	High school
9	(11) 4	Military training

4. In what program are you now enrolled?

Per Cent		
21	(1) 23	Business (1 account clerk; 1 accounting; 4 business education; 5 clerk-steno; 4 clerk-typist; and 8 secretarial science)
43	(2) 47	Trades and crafts (2 aircraft mechanics--airframe; 8 auto body repair and painting; 9 auto mechanics; 6 carpentry; 1 diesel mechanics; 3 electricity; 3 machine shop; 2 radio & television; 5 refrigerator & air conditioning; 1 sheet metal; and 7 welding)
8	(3) 9	Technicians (3 drafting; 5 electronics; and 1 engineering technician)
9	(4) 10	Medical (4 dental assistant; and 6 practical nursing)
6	(5) 7	Sewing (3 apparel trades; and 4 commercial sewing)
6	(6) 6	Foods and Hotel (2 cafeteria management; 1 commercial baking; and 3 hotel & restaurant cooking)
6	(7) 7	Cosmetology (7 cosmetology)

5. What occupation do you intend to enter when you complete technical school? (Do not say that you intend to enter the armed services unless you intend to make the armed services a career).

Per Cent				Per Cent			
78	(1)	85	Same trade or occupation	5	(3)	5	Unrelated trade or occupation
6	(2)	7	Related trade or occupation	2	(4)	2	Undecided

6. Where did you get most of your information about the technical school? (Check one)

Per Cent			
1	(1)	1	Radio, television or newspaper announcement
2	(2)	2	Parent
21	(3)	23	Friend
38	(4)	41	High school teacher or counselor
6	(5)	7	Someone in the trade for which you are training
10	(6)	11	Visiting speaker at high school
10	(7)	11	Technical school staff
5	(8)	5	Prospective employer
4	(9)	4	Don't remember
3	(10)	3	Other (please specify)

7. What was the most important reason why you decided to go to technical school? (Check the one answer that fits you best or fill in your own)

Per Cent			
	(1)	0	My parents wanted me to go
5	(2)	5	I couldn't afford to go to college
3	(3)	3	I could not find a job after leaving high school and decided that I needed more education or training
5	(4)	5	A high school teacher or counselor advised me to go
54	(5)	59	I thought that learning a trade would be the best way for me to get a good paying and secure job
2	(6)	2	I tried to get hired as an apprentice and was unsuccessful
22	(7)	24	I wanted to learn the trade
3	(8)	3	I didn't know what else to do
	(9)	0	Friends of mine were going to technical school
4	(10)	4	Other (please specify)
4	(11)	4	For some reason couldn't get to college: admitted, money, fear

8. Who gave you advice or counseled you about going to technical school? (Check all those who helped you)

Per Cent			
35	(1)	38	No one advised or counseled me about technical school
14	(2)	17 of 123	High school teacher
27	(3)	33	Parents
26	(4)	32	High school counselor
23	(5)	28	Friend
3	(6)	4	Employer
8	(7)	1	High school principal or vice-principal
33	(8)	4	Teacher or counselor at the technical school
33	(9)	4	Other (please specify)

9. Do you plan to enter an apprenticeship program after you graduate? (Check one)

Per Cent			
21	(1)	23	Yes
30	(2)	33	No
49	(3)	53	Don't know

10. Why did you decide to go to technical school rather than enter an apprenticeship program and go to night school? (Check the one answer that fits you best or fill in your own)

Per Cent			
18	(1)	20	I didn't think about it
17	(2)	18	I am learning a trade that does not require apprenticeship or I am in a program that isn't offered in night school.
6	(3)	7	I couldn't get hired as an apprentice
56	(4)	61	I thought the day school program would give me a better education
3	(5)	3	Other (please specify)

11. Why did you choose to go to technical school rather than to the University of Hawaii or another college? (Check the one answer that fits you best or fill in your own)

Per Cent			
10	(1)	11	I didn't think about it
13	(2)	14	I never wanted to go to college
6	(3)	6	I don't like bookwork
21	(4)	23	I couldn't get admitted to the University
13	(5)	14	I couldn't afford to go to the University
4	(6)	4	I passed the University entrance examination but thought I would probably flunk out
16	(7)	17	I think I will earn more money with a trade than I could earn as a university graduate
2	(8)	2	My parents didn't want me to go to college
3	(9)	3	Other (please specify) ________________
7	(10)	8	Pessimistic about chances
6	(11)	7	Wanted trade

12. Do you think you are getting enough shop work in technical school? (Check one)

Per Cent			
73	(1)	79	Yes
17	(2)	19	No
6	(3)	7	Don't know

13. If you would like more shop work would you like it in (check one)

Per Cent			
6	(1)	7	Would not like more shop work
5	(2)	5	Another trade than the one you are training for
51	(3)	55	The trade you are training for
30	(4)	33	A trade which is closely related to the trade you are training for

14a. Do you think too much time is spent on related subjects? (check one)

Per Cent			
12	(1)	13	Yes
83	(2)	90	No
6	(3)	6	Don't know

14b. If Yes, check all subjects that you think too much time is spent on

Per Cent			
4	(1)	1	Math
21	(2)	6	English
39	(3)	11	Science
29	(4)	8	Industrial Economics
7	(5)	2	Related trade subjects

15a. Do you think too little time is spent on related subjects? (check one)

Per Cent			
26	(1)	28	Yes
67	(2)	73	No
7	(3)	8	Don't know

15b. If Yes, check all subjects you would like to spend more time on

Per Cent			
31	(1)	15	Math
20	(2)	10	English
8	(3)	4	Science
8	(4)	4	Industrial Economics
33	(5)	16	Related trade subjects

16. Which of the following subjects would you like to study if the technical schools offered courses in them (Check as many as you would like to study)

% of courses chosen				
28	(1)	31	None of the following	– 77 students, or 71 per cent chose one or more courses
21	(2)	27	Art	42 - 1 course
10	(3)	13	History	23 - 2 courses
14	(4)	18	Music	8 - 3 courses
26	(5)	34	Psychology	3 - 4 courses
20	(6)	26	Politics and government	1 - 5 courses
3	(7)	4	More directly trade related	
3	(8)	4	Science and math	
2	(9)	3	Foreign language, business administration, speech	

17a. Do you expect, or would you like, at some future time to take additional advanced course work in your trade? (check one)

Per Cent	
84	(1) 92 Yes
1	(2) 1 No
15	(3) 16 Don't know

17b. If Yes, where would you prefer to take such courses? (check one)

Per Cent	
21	(1) 19 of 92 On my job
15	(2) 14 At a technical school
26	(3) 24 At an adult evening school
15	(4) 14 At a college or university
23	(5) 21 At a junior college or community college

18a. Do you expect, or would you like, at some future time to take courses in other trades which are closely related to your present trade? (check one)

Per Cent	
74	(1) 81 Yes
11	(2) 12 No
14	(3) 15 Don't know

18b. If Yes, where would you prefer to take such courses? (check one)

Per Cent	
15	(1) 12 On my job
25	(2) 20 At a technical school
26	(3) 21 At an adult evening school
12	(4) 10 At a college or university
22	(5) 18 At a junior college or community college

19a. Do you expect, or would you like, at some future time to take courses in other trades which are not closely related to your present trade? (check one)

Per Cent	
38	(1) 41 Yes
42	(2) 46 No
20	(3) 22 Don't know

19b. If Yes, where would you prefer to take such courses? (check one)

Per Cent	
3	(1) 1 On my job
23	(2) 9 At a technical school
40	(3) 16 At an adult evening school
13	(4) 5 At a college or university
23	(5) 9 At a junior college or community college

20a. Do you expect, or would you like at some future time to take courses that have nothing to do with earning a living but which might be enjoyable or of interest to you? (check one)

Per Cent	
34	(1) 37 Yes
29	(2) 32 No
37	(3) 40 Don't know

20b. If Yes, what courses would you like to take?

Per Cent	
43	(1) 17 Hobby and practical
43	(2) 17 Humanities and social sciences
13	(3) 5 Trade or vocational
3	(4) 1 Science and math

21. Since you have been in technical school, have you made many friends who are preparing for a different trade than the one you are preparing for? (check one)

Per Cent	
73	(1) 80 Yes
27	(2) 29 No

22. Do you believe that your technical school program benefits you in other ways than just preparing you for a specific job? (check one)

Per Cent	
84	(1) 91 Yes
8	(2) 9 No
8	(3) 9 Don't know

23. Do you expect to have any difficulty in getting a job when you complete this program? (check one)

Per Cent	
21	(1) 23 Yes
31	(2) 34 No
48	(3) 52 Don't know

24. Do you expect to remain in the trade for which you are now being trained until you retire? (check one)

Per Cent	
31	(1) 34 Yes
16	(2) 17 No
53	(3) 58 Don't know

25a. Do you feel that your training will equip you to enter other fields than the one you are training for? (check one)

Per Cent	
48	(1) 52 Yes
19	(2) 21 No
33	(3) 36 Don't know

25b. If Yes, what fields?

Per Cent	
4	(1) 2 Needs additional or different training
4	(2) 2 No answer or irrelevant answer
31	(3) 15 Trade training may provide some preparation for
52	(4) 25 Named another program offered in technical school--not specific
8	(5) 4 Ambition for management, etc.

26. Do you feel that your technical school training will give you a better chance for promotion and job advancement in your field? (check one)

Per Cent	
80	(1) 87 Yes
4	(2) 4 No
17	(3) 18 Don't know

27. Do you feel that your technical school training helps you understand the production and selling of goods in the United States? (check one)

Per Cent	
55	(1) 60 Yes
26	(2) 28 No
19	(3) 21 Don't know

28. Do you feel that your technical school training helps you understand the consequences of such changes in our industrial society as the increasing use of self-regulated machines and electronic data processing? (check one)

Per Cent	
63	(1) 69 Yes
22	(2) 24 No
14	(3) 15 Don't know

29. Do you feel that your technical school training has improved your ability to read, write and speak English? (check one)

Per Cent	
63	(1) 69 Yes
15	(2) 16 No
19	(3) 21 Don't know

30. Do you think your technical school training has given you a better understanding of government and politics? (check one)

Per Cent	
29	(1) 32 Yes
53	(2) 58 No
17	(3) 18 Don't know

31. Has lack of money affected your educational efforts since you graduated from high school? (check all statements that apply to you)

Per Cent		
76	(1) 83	No, lack of money has not affected my education
26	(2) 9 of 35	I delayed entering technical school in the fall after graduating from high school
51	(3) 18	I was unable to afford to go to college
3	(4) 1	I do not learn as much at technical school because I have to work
6	(5) 2	I do not think I will be able to complete my technical school program
14	(6) 5	Other, please specify ______________________________

32. In your opinion, how could the technical school program be improved? (take as much space as you need for your answer. Use the back of this page if more space is needed.)

Per Cent		
31	(1) 34	Programs are good now and do not need improvement
65	(2) 71	Programs can be improved by:

WRITTEN COMMENTS

5	(1) 5	Extracurricular activities
7	(2) 7	Inadequate teachers
1	(3) 1	Not enough related trade work
21	(4) 21	Not enough shop work
28	(5) 28	Better equipment, more space, more staff
3	(6) 3	Inadequate books, library and text
2	(7) 2	Too much academic work
19	(8) 19	More varied academic program
2	(9) 2	Inadequate as trade preparation
3	(10) 3	More job placement help (out of state)
2	(11) 2	Longer classes
1	(12) 1	More occupational programs
1	(13) 1	Night school classes
5	(14) 5	Special interest mentioned in government
1	(15) 1	Not relevant

APPENDIX E

COPY

DEPARTMENT OF EDUCATION
Division of Curriculum, Instruction & Guidance
P. O. Box 2360
Honolulu, Hawaii 96804

April 26, 1966

AN OUTLINE OF DIRECTION

The Department of Education is committed to curriculum revision. This proposal is submitted as an outline of a perspective which will set a long-term direction of work. The effort is labeled "a perspective" for it must encompass all benefits of work prior to this date, all past promises made to the public, resolution of issues left unexamined, all federal and state assistance programs, and all functions of the department as service in support of curriculum development. It is proposed that a program of action must produce accomplishments in the following areas.

1. A Statement of Educational Purpose. Periodically, someone looks at the department's statement of goals of education and remarks upon its quality of obsolescence and need for re-statement. Other people who are at work upon segmental projects take an attitude that educational purpose is subsumed in their thoughts or that purpose always comes out in the same high-flown terms no matter who or how many attempt the writing. While a re-statement might sound like any other in the nation, perhaps the difference might lie in people's use of a statement of stance as the final criterion for judgment of all activities now on-going or to be proposed. If a statement of purpose is to serve as test with facility and with frequency, such statement must be simple and pervasive. The purpose might be a quick enunciation of position that our responsibility is the intellectual development of young people who must be taught to speak, read, write and think to make knowledge; any activity within the educational enterprise which does not meet such a test might have to be adjusted, rejustified, or assigned a priority of diminished importance.

2. Curriculum. On a system-wide or state-wide scope covering 209 schools, curriculum must be given a delimited and workable definition. Curriculum is that common outline of minimum expectations of knowledge in each subject, articulated for each year of work; such that every youngster in the state is assured of a basic program of education. Curriculum revision must accommodate changing knowledge, judgments as to relevancy and universality of knowledge, judgments as to priority of kinds of knowledge and the depth and duration of experience with knowledge and needs of the times to meet the test of the purpose of education. The work of curriculum revision will be spearheaded by the State Title III plans now rapidly precipitating into program under Dr. William Savard.

3. Instruction. Methodology, the study of methods of teaching, should occupy our attention, if the teacher and her teaching are the most crucial factors in the development of children. The most effective way of teaching a particular group of children, from a particular situation, in a particular subject, requires knowledge, trial, creation and keeping up with many methods, as a continuing concern. Perhaps resource units and instructional guides are indicated, however, an even more fundamental proposal is here assumed.

If one would commit to intellectual development as purpose, and if improvement to language competency is our foremost focus of attention, it would seem that every course offering in our schools should, perhaps by fiat, stress the apprehension of new learning through reading, writing and speaking. As example of proposal, physical education might not be all large muscle exercise, that students might read, write and speak about a physical maneuver; there are annually, thousands of words written about the golf swing or how to steal second base. A session of painting with poster colors in an art period might be followed by a session discussing or writing or reading about color values, composition or representation. The entire character of the teaching of some of our classes could change completely.

Policies and Regulations. The written and unwritten policies and regulations, traditions and habits, affecting school programs (curriculum and instruction) should be re-examined in conjunction with curriculum revision and instructional improvement. The requirements of graduation, credit system, Carnegie units, periods of time for subject teaching, the organization of a school day, are examples of the fundamental notions which must be declared non-sacrosanct.

School Organization. A critical study of policies affecting learning should afford individual schools the leverage necessary to organize their resources to meet the educational purpose, implement the State curriculum and meet the particular needs of particular school populations. There are many proposals of school organization now proliferating; some guidance and evaluation of these ideas are necessary to insure stability to school programs and to guard against fad or bandwagon adoptions. In any case, curriculum-requirements-study might well shorten or lengthen the duration of coursework in school, and simultaneously, policy liberalization could allow skewing of school programs to marshal all resources to attacks on particular local problems such as language competency, such that study of organization for learning becomes imperative.

Budget, Personnel, Research, Facilities and Other Support Services. It should now be obvious that if curriculum revision will not be confined purely to an abstract and scholarly effort, but will be affective of pedagogy, organization of schools and policies covering the teaching-learning practices, then therefore, the support services must await re-definitions of their handmaiden functions. For quick example, minimum expectations in the various subjects should aid in determining floors of manpower and material needs for budget purposes and should help to gauge justifiable additional budgetary adjustments to particular schools to meet operational criteria such as equal educational opportunity. A look at course offerings in school programs as implementation of curriculum and for adjustment as to length and duration, addition and elimination, and a look at how these shall be taught, will certainly affect the personnel requirements of schools. Readjustments to any and all contemplated dislocation of functions in any division of labor within the department will increasingly require data from static research, if not from more sophisticated constructs, from the division of research.

Federal Assistance Programs. Federal assistance programs now extant, from the very earliest to the most recent Acts, might be classified for influence: (1) maintenance or enrichment support to current programs (2) capacities for affording change to on-going programs or for development of new programs. A point of view in two parts is proposed which begs its testing upon logical, maximum and exemplary use of said funds. (1) Acts and sub-sections of Acts which afford maintenance or general enrichment of current programs should be employed to buy the enrichment service and materials which would have been procured from state funds. The state funds thus freed, where possible, would be employed to effect change to program under the new lump sum privileges, (2) Acts or sub-sections of Acts which specify exemplariness, should be employed to plan and demonstrate new programs.

As rationale for the first part, the practice of each year requesting additional funds for material, and then adding additional material from federal funds (as in NDEA) is not wise economics; nor have additions to additions proved great improvement in our products. For the second part, the example of hire of numerous teacher assistants under Title I of ESE Act 89-10 is used as argumentative criticism against our notions of exemplariness.

Vocational Education. This and the next section should have been subsumed and implicated in the foregoing discussion, but are singled out for attention because of public concern.

The line of responsibility for occupational training should be clear-cut with state establishment of the community college system. A policy statement is now due that the department is responsible for those educational activities for children and youth from pre-school to grade twelve. This statement, coupled with the proposed statement of educational purpose, would lay the basis for re-definition of what is now labeled vocational education and for evaluation of practices and subject expectations, in the effort of curriculum revision.

If intellectual development of children means arming children with the skills of making knowledge and engaging in experiences which deal with seeking universal facts from changing fields of knowledge, then training in progressively involuted, specific skills and knowledge must be gauged for degree of time consumption in present vocational classes. Direction might be gleaned from understandings that the separate vocational education "disciplines" are really practical applications of the sciences including math, or are really representative technologies, but that the technologies have affected human behavior and problems; therefore, the curriculum requirements in this field should actually reinforce, extend, demonstrate, the more abstruse learnings that are proffered in the more general education courses.

Guidance and Special Education. Special education classes should benefit from general curriculum revision. The major need should be the development of technical competencies to overcome relatively severe handicaps to learning. Is it only a hope that work with extreme learning disabilities might not produce insights and methods which might be applicable to a range of disabilities exhibited in the usual classroom?

School lunch feeding service, health services became parts of the educational enterprise because hunger or illness interfered with learning. In much the same way home, peer and personal problems detracted from study and gave rise to the addition of guidance and counseling services to the same enterprise. Except for certain group guidance activities such as planning for an immediate educational future:

(1) there might be a minimum of intrusion of guidance activities upon the academic program;

(2) serious effort should be made to simplify the definitive functions of specialized workers and of the classroom teachers in guidance service; which would require an honest attempt away from seeming efforts to make guidance a distinct discipline;

(3) serious effort should be exerted to make more natural the help seeking relations between student and adult, as against an effort to increase workers by ratios which in turn are prompted by the compulsive demand that every single youngster must be seen within a semester.

A Blueprint of Jobs. If these proposals are negotiable as direction, each state division will have to develop reasonable job goals over reasonable periods of months and years for a blueprint or a longrange effort expenditure program. District and school performance levels must be informed of total direction and of the accomplishment initiative that each level must mount. Some projects are already underway, others must be recalled to fit into a negotiated pattern. The immediate job requires broad base discussion of this paper position.

Ralph H. Kiyosaki

APPENDIX F

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May 24, 1966

Memo to: Members of the Curriculum, Instruction & Guidance Staff

From: Ralph H. Kiyosaki, Assistant Superintendent, CIG

Subject: Direction by Expectations

The discussion of the position paper, An Outline of Direction, continues. To date, I have talked with these groups outside the State Office: the Board of Education; the staffs of the Oahu district offices; the principals of Leeward Oahu. There is practically no disagreement with the concept of a total look at the educational system, or with the idea that movement should start at all levels of our operations. The large question asked is: "What do we do now?" This is an effort to answer that question.

It is proposed that active work from each system-subdivision can be achieved if each person in each unit knows what is expected from him. The following are areas of work expectations: the specific jobs, how and why these jobs must be done, when these jobs need to be finished, must be negotiated individually.

For Each Program Specialist with a Subject or Learning Area Responsibility

A. Statement of Educational Purpose

1. The overall statement of educational purpose will probably be the same as stated in the Outline, but will derive from a "setting" in space-time; the setting and purpose to be written probably in joint venture--Board-State-District and school representatives. Would you care to join?

2. In conjunction with curriculum revision, each specialist shall be expected to write the purpose for the teaching of his subject area.

B. Curriculum

1. A scope and sequence of academic and or learning concepts shall be written for each area of responsibility.

2. Curriculum guides, elementary and secondary, shall be written and published. (Purpose, derivative learnings, concepts-topics.) If guides are relatively new, or are now in process of writing; these shall be re-examined, re-edited and rewritten in the perspective of the Outline. Use the following criteria until more precise tests are developed:

    a. Have you made accommodations for new and changing knowledge?
    b. Have you accommodated all the academic disciplines in your area?
    c. Is each topic or piece of knowledge relevant for our times?
    d. Are your facts universal?
    e. How much time and priority should a learning have against other learnings; how much sophistication should you plan for comprehension of topics?
    f. Will your collective concepts meet the announced purpose of education?

C. Instruction

1. Methods and techniques for teaching shall be incorporated into instructional guides. Such guides might include the material needed for teaching.

2. Resource units to accompany curriculum guides shall be developed regularly.

3. All guides shall include the language arts avenue of apprehension of knowledge, regardless of the nature of a course.

4. Ideas of the kinds of teaching personnel needed shall be proposed. Where personnel cannot be found, ideas for the use of educational technology shall be proposed.

D. School Organization - Policies and Regulations

1. Policy statements relative to grade level inclusion; duration of course periods per day, per year; priority of program in competition with other programs; "credit" designation etc., shall be drafted.

2. Plans and patterns for organizing the school day and the school resources, for teaching your programs shall be written. These plans shall accompany a critical study of present classroom organization practices.

3. Activities, required and elective, shall be examined for retention or elimination. New program ideas for development shall be advanced.

4. Proposals from examination of existing personnel, budget, facilities, research policies and practices shall be advanced for their effects upon teaching and learning conditions.

5. Anticipate the management and phasing problems you will face in schools, State and district offices.

6. Ideas for change to on-going programs for improvement of our products shall be proposed, tested for development.

For Program Specialists with Service Functions

A. Program specialists with pervasive functions shall assist other specialists in development of methodology; development of programs in keeping with educational purpose. (Language Arts, Gifted, Pre-School, etc.); shall develop policies and standards for assigned programs.

Individual Work Production Schedule

A. Each program specialist shall develop an individual work production schedule in discussion with the Assistant Superintendent or with his director. In each discussion, jobs shall be negotiated; e.g., completion of a scope and sequence, completion date, 18 months; sectional completions first half, second half, next year.

COPY

VOCATIONAL EDUCATION
A POINT OF VIEW FOR CURRICULUM DEVELOPMENT

I. Assumptions

A. Can we accept our purpose to be "the intellectual development of young people who must be taught to speak, read, write and think to make knowledge"?

B. Can we accept the fact that the course concerns of the vocational division are a concern with technologies?

  - that technologies are the results of application of learnings from academic disciplines to the problems of basic human needs?

  - that technologies aid in making and add to the knowledge fund of the abstruse disciplines; that technological developments create human problems which must be understood and resolved through the more objective, detached learnings from the academic disciplines?

C. Can we accept a position that study of technologies is necessary and that our educational purpose is served?

  - if the courses from vocational education are not only related to the academic subjects but are employed to enhance and enlarge these subjects;

  - if the language arts skills are employed along with "doing" in teaching understandings;

  - if the shops and fields are truly employed as laboratory and demonstration centers;

  - if we accept that the world of gainful work is a major concern but that specific occupational training is not our purpose.

II. Guidelines for Curriculum Development

A. Examine and restate purposes of present courses.

B. Examine present course content and activities

  1. Identify the academic disciplines reflected

  2. Relate content and activities to subject fields

  3. Judge present course content and activities for

     - relevancy of knowledge
     - universality of knowledge
     - depth and duration of experience with knowledge
     - needs of times

  4. Develop scope and sequence

C. Apportion course time in three main blocks and develop

    1. Relationships to the Physical and Natural Sciences, Math, Humanities, Social Sciences.

    2. Skills development in subject

    3. Laboratory Section

D. Develop Instructional Guide

III. A Further Assumption

A. Can we agree that there are young people in our schools who are potential drop-outs or chuck-outs; that there are young people in any normal population who are unfortunately endowed with relatively little aptitude for prolonged or deep academic studies?

B. Can we agree that such youngsters are academically halt, blind and deaf as others are physically impaired?

- Then we must accommodate these academically impaired in Special Education programs.

IV. Some Guidelines for Curriculum Development of Special Education

A. In conjunction with the Guidance and Special Education Branch and the Instructional Division, the Division of Vocational Education shall develop, particularly, identification, counseling, curricular and instructional guides.

B. Programs shall be developed which have realistic academic expectations free from the usual policy and organizational restrictions; which have realistic occupational training provisions.

C. Programs shall be developed (out of Federal funds) for young people, of post-high school nature, particularly where community colleges are not in reasonable commuting distance or where program of community colleges bar entry or where more specific job training is deemed necessary.

APPENDIX G

COPY

STATE OF HAWAII
BOARD OF EDUCATION
HONOLULU, HAWAII

July 20, 1966

VOCATIONAL EDUCATION

The Board of Education reaffirms its action of May 19, 1966, adopting a general direction on curriculum revision, which states that the goal of Hawaii's public schools is the maximum intellectual development of all children. It directs that this goal should be reflected in all curricular and school programs and in the use of financial and professional resources.

The Board of Education believes that the best basis for a successful vocational education and a productive career in the world of work in commerce, industry or government is a strong background in the intellectual curriculum in which the fields of language, mathematics and other academic disciplines are emphasized.

The Board of Education, further, believes that those students in vocational programs at the secondary level who have found the present general academic offerings unsuitable will be best served by new or redeveloped courses in general education. For these students, variously known as intellectually, culturally or socially disadvantaged, whose numbers are increasing and whose plight is receiving greater national attention, the solution is not early channeling into vertical programs of vocational education courses. The Board believes that deprivations leading to academic impairment must not be compounded by academic deprivation.

It is the mandate of this Board of Education that the curriculum in general education be so developed that each child and youth will be motivated to achieve the full development of his intellectual potential. The curriculum development activities of the Department of Education and the University of Hawaii should be directed to this end.

While affirming its stand on curriculum revision, the Board of Education believes that a strong, appropriate vocational education program is essential for the youth of Hawaii and its economy. The issue is not the survival of vocational education. Rather, how best to serve its higher purpose in our State's and Nation's goals is the real challenge in education.

The Board of Education is convinced that vocational preparation programs are best located in those years immediately preceding entry to the occupational world. The age of job entry is increasing. For most of our youth, vocational training is now in the post-high school years, increasingly in the technical and business schools, junior and community colleges, and in training conducted in an industry or government agency programs.

The Board of Education observes that since maturity, adult judgement, and relatively sophisticated levels of knowledge and skills are all required for most "new" jobs today, it is highly unlikely that the "comprehensive" high schools of our state can serve adequately as centers of occupational training. The Board of Education believes that the most successful job-oriented vocational-technical training programs are achieved in the post-high school years.

The Board of Education believes that certain programs, while not considered "vocational" in a formal way, are related to the worlds of work and useful service in our vocations and at home. It is our desire that the programs of "industrial arts", "business and distributive education", and "Homemaking", among others, be studied intensively in Hawaii during the next twelve months. We are interested in finding out whether or not these programs have intellectual or academic aspects which can be emphasized. We also request the Superintendent and his staff to consider whether or not the intellectual aspects might best be served by their absorption into programs in the sciences, social sciences and the arts.

With these views in mind, the Board of Education directs the Superintendent of Education and his staff to engage in discussion with the University of Hawaii and the Community College administration that may lead to recommendations for the specific delineation and articulation of educational responsibilities in the job-oriented vocational or technical training programs of our young people. The Board of Education is ready to recommend to the State Board of Vocational Education that the Community College System of Hawaii be designated as the major agency for vocational training.

Finally, the Board of Education directs the Superintendent of Education to develop statutory proposals, departmental policy and administrative recommendations that would make this change in major responsibilities for vocational training and also for the necessary changes in the secondary curriculum in general education.

The Board of Education desires to work closely with the Board of Regents of the University of Hawaii for the educational advancement of our children and youth.

PUBLISHED REPORTS OF THE LEGISLATIVE REFERENCE BUREAU

1955 1. Digest of Proposals for Combatting Unemployment in Hawaii. 52p.

1956 1. Residential Treatment of Maladjusted Children. 80p. (out of print)
2. Jury Fees in Civil Cases. 53p.

1957 1. A Study of Extending Unemployment Insurance to Agricultural Labor in Hawaii. 64p.
2. A Study of Large Land Owners in Hawaii. 28p. (out of print)
3. Mineral Rights and Mining Laws. 49p.
4. A Report on Administration of Territorial Courts. 30p. (out of print)

1958 1. Revision of State or Territorial Statutes. 26p. (out of print)
2. Reapportionment of the Territorial Legislature. 46p. $1
3. Hawaii Legislative Manual. 88p. (out of print)

1959 1. The Foreign-Trade Zone. 48p. $1
2. Administration of Indigent Medical Care in Hawaii. 55p. (out of print)
Some Effects of Hawaii's 1957 Tax Law. 118p. $1.50
Hawaii State Government Organization. 2 volumes. (out of print)

1960 1. Pre-Session Filing and Related Legislative Procedures. 38p. $1
2. Capital Improvements Programs in Hawaii. 47p. $1
3. The Costs of Hospitalization for Indigents in Hawaii. 42p. $1
4. Public Assistance in Hawaii: Statutory Provisions and Trends in Payments. 31p. $1
The Structure of the Hawaii State Government. 25p. (out of print)

1961 1. Disaster Relief: Considerations for State Action. 60p. $1
2. Free Choice of Physician in Hawaii's Medical Care Program. 21p. $1
3. Real Property Tax Exemption in Hawaii. 29p. $1
4. School Boards and Public Education. 139p. $1
5. Public Land Policies of the United States and the Mainland States. 67p. $1
6. The Hawaii Public Utilities Commission. 89p. $1
7. Care of the Chronically Ill and Disabled Aged. 44p. $1
8. The Hawaii Antitrust Act. 68p. $2

1962 1. Tax Problems and Fiscal Policy in Hawaii. 74p. $1
2. Hawaii Legislative Manual. Rev. ed. 80p. (out of print)
3. Nursing and Nursing Education in Hawaii. 117p. $1

1963 1. Study of the Workmen's Compensation Law in Hawaii. 154p. (out of print)
2. Hawaii's General Excise Tax. 56p. $1
3. Nonresident Students and the University of Hawaii. 96p. $1
4. The Role of the State in the Regulation of Pharmacy. 159p. $1
5. The Uniform Commercial Code and the Hawaii Law. 346p. $2
Guide to Government in Hawaii, Second Edition. 97p. (out of print)

1964 1. The Hawaiian Homes Program: 1920-1963. 52p. $1
1a. Legal Aspects of the Hawaiian Homes Program. 72p. $1
1b. Land Aspects of the Hawaiian Homes Program. 47p. (out of print)
1c. Social Aspects of the Hawaiian Homes Program. 74p. (out of print)
1d. The Maori Affairs Program. 43p. $1
Directory of State, County and Federal Officials. 80p. $1
2. Public Land Policy in Hawaii: Land Exchanges. 79p. $1
3. College and the Needy Student in Hawaii. 2 volumes. $2

1965 1. Public Land Policy in Hawaii: The Multiple-Use Approach. 88p. (out of print)

1966 1. Hawaii Legislative Manual: A Handbook for Legislators. Third Edition. 81p. $1.50
2. Public Land Policy in Hawaii. Land Reserved for Public Use. 95p. $1.00